

Positive Psychology at Work: The Role of Character Strengths for Positive  
Behavior and Positive Experiences at the Workplace

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Dedicated to

Marco

Thank you so much for all your love and support.

My parents

Thanks for rearing me to a curious, persistent, and optimistic person.



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Abstract

The prime aim of the present thesis was to get further understanding in the role of character strengths at the workplace with the focus on their relations with positive behavior and positive experiences at work. Positive behavior at work was studied with respect to four different dimensions of job performance (i.e., task performance and three dimensions of contextual performance: job dedication, interpersonal facilitation, and organizational support). Furthermore, the present thesis focused on the four positive experiences at work job satisfaction as well as pleasure, engagement, and meaning at work. The examination of relationships considered the direct relationships (i.e., the associations across participants) but also the indirect relationships of character strengths (i.e., correlations across character strengths: i.e., strengths-related person-job fit) to positive behavior and positive experiences at work. The results described within the present thesis derived from a set of several studies showing replicable results. Data analyzes showed that specific character strengths were meaningfully associated with specific dimensions of job performance. Furthermore, character strengths-related person-job fit (here: the number of signature strengths applied at work) was associated with job performance, positive experiences at work, and seeing the job as a calling. The application of at least four signature strengths seems to be crucial for a high level of positive experiences at work and seeing a job as a calling. Furthermore, degree of character-strengths related person-job fit has two modes of action on calling – direct and indirect through the enhancement of positive experiences. Strengths as well as limitations of the studies conducted within the scope of the present thesis were discussed. Finally, further questions that arise from the findings and draft ideas for future research were presented.

### Zusammenfassung

Das Ziel der vorliegenden Dissertation war, ein besseres Verständnis über die Rolle von Charakterstärken im Arbeitsleben zu erhalten. Dabei lag der Fokus insbesondere auf dem Zusammenhang von Charakterstärken mit positivem Verhalten und positivem Erleben bei der Arbeit. Positives Verhalten am Arbeitsplatz wurde unter Berücksichtigung von vier Dimensionen beruflicher Leistung untersucht (arbeitsbezogene Leistung und drei Dimensionen kontextueller Leistung: volitionales, interpersonales und organisationales Verhalten). Des Weiteren fokussiert diese Dissertation auf vier Aspekte des positiven Erlebens bei der Arbeit: Arbeitszufriedenheit sowie Spaß, Engagement und Sinn bei der Arbeit. Bei der Untersuchung der Zusammenhänge von Charakterstärken mit positivem Verhalten und positivem Erleben bei der Arbeit wurden einerseits die direkten Zusammenhänge berücksichtigt (Analysen über Personen hinweg). Andererseits wurde auch die Rolle von Stärken-bezogener Passung zwischen Personen und ihrem Beruf betrachtet (Analysen über Stärken hinweg; indirekter Zusammenhang). Die in der vorliegenden Dissertation berichteten Befunde stammen jeweils aus einer Reihe von mehreren Studien. So konnte immer auch die Replizierbarkeit der Ergebnisse geprüft werden. Einzelne Charakterstärken korrelierten auf inhaltlich sinnvolle Weise mit einzelnen Dimensionen beruflicher Leistung. Des Weiteren war auch die Stärken-bezogene Passung zwischen Personen und ihrem Beruf (d.h., die Anzahl der bei der Arbeit angewendeten Signaturstärken) mit beruflicher Leistung, positivem Erleben bei der Arbeit und der Wahrnehmung des Jobs als Berufung assoziiert. Die Passung zwischen Person und Beruf beeinflusste auf zweierlei Weisen die Wahrnehmung des Jobs als Berufung. Erstens gab es einen direkten Zusammenhang: Personen, die Ihre Signaturstärken bei der Arbeit anwenden können, nehmen Ihren Beruf eher als Berufung wahr. Zweitens gab es einen indirekten Zusammenhang: Personen, die Ihre Signaturstärken bei der Arbeit anwenden konnten, berichteten höhere Werte im positiven Erleben bei der Arbeit, welches wiederum die Wahrnehmung des Job als Berufung begünstigte. Stärken und Limitationen der Studien, welche im Rahmen der vorliegenden Dissertation durchgeführt wurden, wurden diskutiert. Abschließend wurden Forschungsfragen für zukünftige Untersuchungen abgeleitet und skizziert.

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## **General Introduction**

Psychology has long focused on pathology and the development of treatments for various disorders. In contrast, the main focus of *positive psychology* is what makes our lives most worth living (Seligman & Csikszentmihalyi, 2000). This focus pursues research on conditions and processes that enable human flourishing and optimal functioning (Gable & Haidt, 2005). Three topics are at the center of positive psychology: (a) positive subjective experiences (e.g., happiness or pleasure); (b) positive individual traits (e.g., character strengths or talents); and (c) positive institutions (e.g., families or workplaces) (Seligman & Csikszentmihalyi, 2000; Peterson, 2006a). Positive institutions enable the development and/or display of positive traits like character strengths, which in turn foster positive experiences (Peterson, 2006a) and lead people to positive behavior (Peterson & Park, 2006). The work environment is seen as one of the natural environments for positive psychology (Park & Peterson, 2007) to study what goes right in life (Peterson, 2006a). Therefore, the present thesis addresses the relationships of character strengths with positive experiences and positive behavior at work.

The thesis comprises a general introduction, three parts describing studies that were conducted to investigate the relationships of character strengths with positive behavior and positive experiences at the workplace, and a general discussion. The general introduction describes the theoretical background of character strengths, and how they can be measured. Furthermore, the current status of research on character strengths in general is summarized. Research describing the role of character strengths at work is presented afterwards. Then the currently known relationships and gaps of knowledge towards the associations of character strengths with positive experiences and positive behavior at work are described. This section also includes a definition of the positive behaviors and positive experiences at work, which were focused on in the present thesis. Finally, the aims of the present thesis are summarized

including a short overview on the three parts of the thesis that are then presented in detail. The thesis ends with a general discussion of the findings highlighting main results and conclusions, strengths and limitations of the studies conducted within the present thesis as well implications for future research and practice.

### **A Classification of Positive Traits**

Clinical psychologists, psychiatrists, and social workers use classification schemes such as the *Diagnostic Statistic Manual of Mental Disorders* (DSM) or the *International Classification of Diseases* (ICD) for classifying and diagnosing patients. However, the positive psychologists' desk reference is the so-called *Manual of the Sanities* by Peterson and Seligman (2004) describing human strengths as positive traits rather than weaknesses and pathologies. The good character is seen as an important instance of optimal functioning (Park & Peterson, 2007; Peterson & Seligman, 2004). Peterson and Seligman (2004) introduced the Values in Action (VIA) classification of strengths as an extensive framework for the investigation of character and character strengths. Within the VIA classification a good character exists in degrees rather than in categories (Peterson & Seligman, 2004; also cf., McGrath, Rashid, Park, & Peterson, 2010). Peterson and Seligman (2004) postulated a “hierarchical classification of positive characteristics” (p. 13) with the three conceptual levels virtues, character strengths, and situational themes (from the highest to the lowest level). Table 1 gives an overview on the virtues and character strengths as well as their definitions.

Table 1

*Classification of Six Core Virtues and 24 Strengths of Character*

Virtue I – Wisdom and knowledge: Cognitive strengths that entail the acquisition and use of knowledge	
(1) Creativity [synonyms are originality, ingenuity]: Thinking of novel and productive ways to conceptualize and do things; includes artistic achievement but is not limited to it	
(2) Curiosity [interest, novelty-seeking, openness to experience]: Taking an interest in all of ongoing experience for its own sake; finding subjects and topics fascinating; exploring and discovering	
(3) Judgment & Open-Mindedness [critical thinking; short: judgment]: Thinking things through and examining them from all sides; not jumping to conclusions; being able to change one’s mind in light of evidence; weighing all evidence fairly	
(4) Love of Learning: Mastering new skills, topics, and bodies of knowledge, whether on one’s own or formally; obviously related to the strength of curiosity but goes beyond it to describe the tendency to add systematically to what one knows	
(5) Perspective [wisdom]: Being able to provide wise counsel to others; having ways of looking at the world that make sense to oneself and to other people	
Virtue II – Courage: Emotional strengths that involve the exercise of will to accomplish goals in the face of opposition, external or internal	
(6) Bravery [valor]: Not shrinking from threat, challenge, difficulty, or pain; speaking up for what is right even if there is opposition; acting on convictions even if unpopular; includes physical bravery but is not limited to it	
(7) Perseverance [persistence, industriousness]: Finishing what one starts; persisting in a course of action in spite of obstacles; “getting it out the door”; taking pleasure in completing tasks	
(8) Honesty [authenticity, integrity]: Speaking the truth but more broadly and presenting oneself in a genuine way and acting in a sincere way; being without pretense; taking responsibility for one’s feelings and actions	
(9) Zest [vitality, enthusiasm, vigor, energy]: Approaching life with excitement and energy; not doing things halfway or halfheartedly; living life as an adventure; feeling alive and activated	
Virtue III – Humanity: Interpersonal strengths that involve “tending and befriending” others	
(10) Capacity to Love and Be Loved [short: love]: Valuing close relations with others, in particular those in which sharing and caring are reciprocated; being close to people	
(11) Kindness [generosity, nurturance, care, compassion, altruistic love, “niceness”]: Doing favors and good deeds for others; helping them; taking care of them	
(12) Social Intelligence [emotional intelligence, personal intelligence]: Being aware of the motives and feelings of other people and oneself; knowing what to do to fit into different social situations; knowing what makes other people tick	

*(Table 1 continues)*

(Table 1 continued)

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Virtue IV – Justice: Civic strengths that underlie healthy community life

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- (13) Teamwork [citizenship, social responsibility, loyalty]: Working well as a member of a group or team; being loyal to the group; doing one's share
  - (14) Fairness: Treating all people the same according to notions of fairness and justice; not letting personal feelings bias decisions about others; giving everyone a fair chance
  - (15) Leadership: Encouraging a group of which one is a member to get things done and at the time; maintain good relations within the group; organizing group activities and seeing that they happen
- 

Virtue V – Temperance: Strengths that protect against excess

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- (16) Forgiveness & Mercy [short: forgiveness]: Forgiving those who have done wrong; accepting the shortcomings of others; giving people a second chance; not being vengeful
  - (17) Modesty & Humility [short: modesty]: Letting one's accomplishments speak for themselves; not regarding oneself as more special than one is
  - (18) Prudence: Being careful about one's choices; not taking undue risks; not saying or doing things that might later be regretted
  - (19) Self-Regulation [self-control]: Regulating what one feels and does; being disciplined; controlling one's appetites and emotions
- 

Virtue VI – Transcendence: Strengths that forge connections to the larger universe and provide meaning

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- (20) Appreciation of Beauty and Excellence [awe, wonder, elevation; short: beauty]: Noticing and appreciating beauty, excellence, and/or skilled performance in various domains of life, from nature to art to mathematics to science to everyday experience
  - (21) Gratitude: Being aware of and thankful for the good things that happen; taking time to express thanks
  - (22) Hope [optimism, future-mindedness, future orientation]: Expecting the best in the future and working to achieve it; believing that a good future is something that can be brought about
  - (23) Humor [playfulness]: Liking to laugh and tease; bringing smiles to other people; seeing the light side; making (not necessarily telling) jokes
  - (24) Religiousness & Spirituality [faith, purpose; short: religiousness]: Having coherent beliefs about the higher purpose and meaning of the universe; knowing where one fits within the larger scheme; having beliefs about the meaning of life that shape conduct and provide comfort
- 

*Note.* Labels of character strengths and expressions in brackets emphasize family resemblance to acknowledge heterogeneity of strengths and to minimize subtle (political or otherwise) connotations (Peterson & Seligman, 2004).

The six virtues shown in Table 1 consistently emerged in former religious and philosophical texts across culture and history (Dahlsgaard, 2004; Dahlsgaard, Peterson, & Seligman, 2005). Virtues are defined as dispositions “to act, desire, and feel that involves the exercise of judgment and leads to a recognizable human excellence or instance of human flourishing” (Yearly, 1990, p. 13). They are corrective, meaning that they “correct some difficulty thought to be natural to human beings, some temptation that needs to be resisted, or some motivation that needs to be made good” (Yearly, 1990, p. 16). Peterson and Seligman (2004, p. 13) assumed that a good character might be described by “above-threshold values for an individual” in all these virtues. Despite that this assumption has not been followed up in research until now, it nevertheless indicated that a good character is plural rather than singular. Virtues are very abstract, whereas character strengths represent the components of the good character as measurable individual differences (Peterson & Seligman, 2004).

After collecting the virtues from philosophical and religious traditions, entries for the character strengths as the “psychological ingredients – processes and mechanisms – that define the virtues” (Peterson & Seligman, 2004, p. 13) were collected. This was done in a variety of ways; for example, review of literature on good character (from psychiatry, youth development, philosophy, and psychology), brainstorming in core groups of scholars, statements of Boy Scouts of America and messages in popular song lyrics. To reduce the initial list of human strengths, several criteria were used to identify character strengths (Peterson & Seligman, 2004). Table 2 gives an overview of the defining criteria for a character strength.



Table 2

*Criteria for a Character Strength*<sup>1</sup>

- 
- (1) Ubiquity – is widely recognized across cultures
  - (2) Fulfilling – contributes to individual fulfillment, satisfaction, and happiness broadly construed
  - (3) Morally valued – is valued in its own right and not for tangible outcomes it may produce; although strengths can and do produce desirable outcomes
  - (4) Does not diminish others – elevates others who witness it, producing admiration, not jealousy
  - (5) Nonfelicitous opposite – has obvious antonyms that are “negative”
  - (6) Trait-like – is an individual difference with demonstrable generality and stability; it needs to manifest in the range of an individual’s behavior (thoughts, feelings, and/or actions); people can reflect on their own strengths and talk about them to others
  - (7) Measureable – has been successfully measured by researchers as an individual difference
  - (8) Distinctiveness – is not redundant (conceptually and empirically) with other character strengths, the strengths is arguably unidimensional and not able to be decomposed into other strengths
  - (9) Paragons – is strikingly embodied in some individuals that are consensually recognized
  - (10) Prodigies – is precociously shown by some children or youth
  - (11) Selective absence – is missing altogether in some individuals
  - (12) Institutions – is the deliberate target of social practices and rituals that try to cultivate it
- 

*Note.* List of criteria was compiled on the basis of the list provided by Park & Peterson (2007, p. 296) completed by the present author with information by Park, Peterson, & Seligman (2004a, p. 605), Peterson (2006a, p. 141f; b, p. 30f), Peterson & Park (2004), Peterson, Park, & Seligman (2005a, p. 95), Peterson & Seligman (2004; p. 17ff), Peterson, Stephens, Park, Lee, & Seligman (2010, p. 222f), and Seligman, Steen, Park, & Peterson (2005, p. 411).

<sup>1</sup> The list of criteria varies from seven to twelve points depending on the reference. In some of the references that described the criteria for a character strengths criterion 6 and 7 as well criterion 1 and 3 were presented together. Furthermore, the criteria 5, 10 and 11 were excluded (without any further explanation).

As Table 2 shows, the initial list of human strengths was shorten, for example, by combining redundancies and excluding characteristics not valued across cultures (e.g.,

cleanliness, frugality, and silence). Character strengths are seen as the “distinguishable routes to displaying” a virtue (Peterson & Seligman, 2004, p. 13). For example, the strengths of the virtue wisdom and knowledge “involve the acquisition and use of knowledge, but they are also distinct” (p. 13). Three to five character strengths were assigned to each of the six virtues. The assignment of the strengths to the virtue categories was done on theoretical grounds as opposed to be done empirically (e.g., by factor analytical approaches).

During the development of the VIA classification, the number of character strengths included in the classification varied. In the beginning 20 character strengths were part of the classification and measurement. Modesty, forgiveness, humor, and zest were added later (see Peterson & Seligman, 2003, 2004). However, to the best of the present author’s knowledge, further descriptions of the reasons for that have not been presented in any of the strengths-related publications. Nevertheless, Peterson and Seligman (2004) clearly stated that the VIA classification should be seen as a starting point for research on positive traits and that the number of strengths as well as their assignment to the virtues were not regarded as fixed (also cf., Peterson, 2006a). Adding new distinct strengths or consolidating empirically indistinguishable strengths was explicitly regarded as possible. First studies were conducted within this topic highlighting that for example, the assignment of humor to humanity might be the more appropriate than assigning it to transcendence (Beermann & Ruch, 2009; Müller & Ruch, 2011). This topic was not further addressed in the present thesis as the role of character strengths for positive behavior and positive experiences was of interest and not the assignment of strengths to the virtues.

Although character strengths are defined as being ubiquitously recognized and valued, one individual will hardly show all together (Peterson & Seligman, 2004). Instead, character strengths can be ranked for each individual with respect to how central they are to the person. Peterson and Seligman (2004) postulated that most people have between three and seven core

or “signature” strengths relying on experiences from interviews with adults about their core strengths (but without presenting more detailed results). Signature strengths are the ones that “a person owns, celebrates, and frequently exercises” and it is hypothesized that their “exercise [...] is fulfilling” (Peterson & Seligman, 2004, p. 18). Peterson and Seligman (2004) provided a list of ten possible criteria for a signature strength. A signature strength is, for example, characterized by the wish to use it, to behave in accordance to it and to be intrinsically motivated to use the strength (Peterson & Seligman, 2004). People feel invigorated instead of exhausted when using a signature strength (Peterson & Seligman, 2004). Despite these theoretical thoughts there is no research to validate these criteria. Furthermore, further research is needed to study the individual differences in the number of signature strengths, especially because Peterson (2006a) stated that individuals typically own between two and five signature strengths. Nevertheless, Seligman et al. (2005) demonstrated the role signature strengths by showing that the application of signature strengths yielded increases in happiness and decreases in depression.

The lowest level of the VIA classification is defined by the situational themes. These are “specific habits that lead people to manifest given character strengths in given situations” (Peterson & Seligman, 2004, p. 14). Curiosity might be shown in a different way at work, within the family, or peer group. For example, curiosity at work may manifest in broad interest in the topics relevant at work, but within in the peer group funny gossip might be of special interest. Interest in funny gossip, however, might not be appropriate at work but within the peer group. There can be cultural, cohort specific, or gender specific differences as well (Peterson & Seligman, 2004). However, research on situational themes is less frequent than on character strengths. To the knowledge of the present author, only the Gallup Organization works in situational themes having a specific emphasis on work-related aspects (e.g., Harter & Blacksmith, 2010). However, their measure is not open-access but expensive

and therefore, might not have spread in positive psychology research as much to increase the amount of research on situational themes. Furthermore, as character strengths are the part of VIA classification that was thought to be measurable, a lot of work was done on the development of instruments assessing the character strengths.

### **The Measurement of the 24 Character Strengths**

Several instruments assessing the 24 character strengths were developed (i.e., Values in Action Inventory of Strengths – VIA-IS; Values in Action Rising to Occasion Inventory – VIA-RTO; Values in Action Inventory of Strengths for Youth – VIA-Youth; Values in Action Structured Interview – VIA-SI; Brief Strengths Test – BST; content analyses of parental descriptions) (cf., Park & Peterson, 2003, 2006a, b, 2007; Peterson, 2005, 2006b; Peterson & Park, 2004; Peterson et al., 2005a; Peterson & Seligman, 2004). The measurement focused on the positive end of the strength continuum and therefore, assessment addressed the degree to which an individual possesses the character strengths from “not at all” to “very much” (Peterson & Seligman, 2004)<sup>1</sup>. The most frequently studied instrument for adults is the VIA-IS.

The VIA-IS (Peterson et al., 2005a) is a 240-item self-report questionnaire (10 items per strength) using a 5-point Likert-scale (from 5 = *very much like me* through 1 = *very much unlike me*). The mean of the 10 items of each scale forms the scale score. The original version of the VIA-IS is in English language and emerged in several steps (Peterson & Seligman, 2004). Christopher Peterson and Martin Seligman wrote the items with the assistance of students who generated examples of prototypical behaviors that reflect the 24 character strengths (see Buss & Craik, 1983, for a description of the act frequency approach). Internal

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<sup>1</sup> “Some strengths and virtues are *bipolar*, that is, there is a negative anchor to the continuum that defines the characteristic (e.g., ‘kindness’ ranges across degrees of mean-spiritedness through a zero point to its increasingly positive instances). Other characteristics are better seen as *unipolar* (e.g., ‘sense of humor’ has a zero point but no meaningful negative range). Our focus in all cases is on the positive end of the strength continuum [...]” (Peterson & Seligman, 2004, p. 22).

consistencies of the scales in the first version were satisfying (most alphas  $> .70$ ), but some items had low corrected item-total correlations and needed to be replaced until all internal consistencies were satisfying (all alphas  $> .70$ ). Peterson and Seligman (2004) reported data from more than 150,000 adults. Scores varied meaningfully although having means above the scale mid-point of 3. All scales had internal consistencies  $> .70$  and test-retest correlations over a 4-month period were comparable to the internal consistencies. There were small but meaningful relations to demographics. For example, women scored higher in the strengths of humanity than men, younger adults had higher scores in humor than older ones, and married participants rated themselves higher in forgiveness than divorced ones did. Social desirability scores did not statistically significantly correlate with the VIA-IS except prudence and religiousness, which showed associations with social desirability based on substance, not only on style. Self- and other-nominations of the strengths corresponded to the VIA-IS scale ratings.

**The German version of the VIA-IS.** The VIA-IS was adapted into German (Ruch, Proyer, Harzer, Park, Peterson, & Seligman, 2010) for investigating the character strengths in German speaking countries. It was put into a peer-rating form (VIA-IS Peer) to study the role of reporting-bias, as the research on character strengths was mainly restricted to self-reports. Information on distribution, reliability, and validity was provided in Ruch, Proyer, Harzer et al. (2010) for both, the VIA-IS and the VIA-IS Peer. Scores varied meaningfully being normal distributed although the scale means were above scale mid-point of 3 in both versions (except religiousness showing means ranging from 2.85 and 3.02). Internal consistencies ranged between .71 (honesty) and .90 (religiousness) with a median of .77, and between .73 (honesty) and .89 (religiousness) with a median of .81 in the VIA-IS and VIA-IS Peer, respectively. Retest reliabilities (three, six, and nine months) of the VIA-IS were comparable to internal consistencies and numerically decreased with time as it was to be expected.

Relationships of the German VIA-IS with demographics were modest but meaningful, and similar to the ones found for the original VIA-IS. Women scored higher in the strengths of humanity, appreciation of beauty and excellence, and gratitude. The older participants were, the higher their scores in the strengths of temperance. The strengths of wisdom and knowledge were positively correlated with educational level. Both, the VIA-IS and VIA-IS Peer were not strongly related to self-rated social desirability (VIA-IS: median  $r = .09$ ; VIA-IS Peer: median  $r = .07$ ). Self-rated and peer-rated strengths converged well (across individuals: median  $r = .40$ ; within individuals: median  $r = .64$ ). Strengths ratings in the questionnaire and nominations of the top five strengths out of a list of the 24 character strengths were positively related to each other with  $r = .69$  and  $r = .70$  in the VIA-IS and VIA-IS Peer, respectively.

**Factor structure of the VIA-IS.** Peterson and Seligman (2004) highlighted that an individual of good character may display one or two strengths within a virtue and that one individual would rarely (if ever) display all strengths of a virtue. Consequently, factor analyses might not be the method of choice to test the assignment of strengths to virtues. Nevertheless, the internal structure of the VIA-IS is of interest as this provides information about which character strengths most likely co-occur within individuals. Those strengths factors can also serve as a more abstract level of data analyses that might help to get a broader overview of how strengths (factors) relate to other variables before going more into detail on the level of single character strengths.

In total 14 papers deal with the question of the factor structure of the VIA-IS (Brdar & Kashdan, 2010; Choubisa & Singh, 2011; Duan, Bai, Zhang, & Tang, 2011; Khumalo, Wissing, & Temane, 2008; Macdonald, Bore, & Munro, 2008; Miljković & Rijavec, 2008; Peterson, 2006a; Peterson, Park, Pole, D'Andrea, & Seligman, 2008; Peterson & Park, 2004; Peterson & Seligman, 2004; Ruch, Proyer, Harzer et al., 2010; Shyrack, Steger, Krueger, &

Kallie, 2010; Singh & Choubisa, 2009, 2010). Results differed with respect to the characteristics of (a) samples (adult volunteers vs. students vs. twins), (b) data (absolute vs. ipsative scores<sup>2</sup>), (c) version of the VIA-IS (original vs. items from the International Personality Item Pool by Goldberg), and (d) language (participants filled in the VIA-IS in their native language vs. foreign language).

When examining absolute scores (utilizing principal component analysis with Varimax rotation) in non-student samples that filled in the original VIA-IS in a version of their native language a five factor solution seemed to be the most appropriate one (no matter if data comes from self- or peer-ratings). These five factors were labeled as *emotional strengths* (also named strengths of fortitude; e.g., bravery, honesty, and perspective), *interpersonal strengths* including the strengths of humanity and justice (e.g., love, kindness, and leadership), *strengths of restraint* (also labeled as temperance; e.g., forgiveness, fairness, and modesty), *intellectual strengths* (also named cognitive strengths; e.g., creativity, curiosity, and love of learning), and *theological strengths* (also labeled as transcendence; i.e., beauty, gratitude, and religiousness).

Whenever students and twins were studied, a smaller number of factors resulted. It might be argued that those factor solutions are less interpretable as specific characteristics of the samples influenced the factor solutions. Within those samples participants were to some extent more similar to each other than in adult samples with various backgrounds. This may have resulted in sample-specific strengths profiles like for vocational groups (cf., Harzer, 2008, 2011). These sample-specific strengths profiles might have an impact on the factorial solution as they resulted in higher intercorrelations among the scales, as they were more likely to co-occur than in mixed samples of adults. Further research needs to study this in more detail. Still less factors resulted when students did not fill in a VIA-IS adapted into their

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<sup>2</sup> Ipsative scores are intra-individual standardized scores. They are computed by subtracting the individual total mean from each of the scale scores in the VIA-IS.

native language but one in a foreign language. However, this might be due to the inappropriate measure, which facilitated more general answer styles resulting in stronger correlations among the VIA-IS scales, which yielded in a smaller number of factors.

Nearly all of the studies primarily relied on the Kaiser criterion (eigenvalue > 1) and Scree plot. Only three reported relying on further criteria, for example, parallel analysis or congruency across rating sources like self- and peer-ratings (cf., Brdar & Kashdan, 2010; Ruch, Proyer, Harzer et al., 2010; Shyrack et al., 2010). Consequently, most of the results regarding the factorial solution need to be interpreted cautiously especially considering the role of sample characteristics as well.

Factor analyzes of ipsative scores were only reported twice (cf., Peterson, 2006a; Ruch, Proyer, Harzer et al., 2010). When studying ipsative scores a two-factor solution results with bi-polar factors (principal component analysis with oblique rotation). The first one includes *strengths of the head* (e.g., judgment, self-regulation, and perseverance) vs. *strengths of the heart* (e.g., kindness, humor, and gratitude). The second factor entails *strengths with focus on others* (e.g., teamwork, fairness, and leadership) vs. *strengths with focus on self* (e.g., creativity, curiosity, and zest).

**Ubiquity of character strengths.** One characteristic of character strengths is that they should be positively valued and recognized across cultures (Peterson & Seligman, 2004). Until January 2012 one study existed that directly examined how valued the character strengths were in different cultures. Biswas-Diener (2006) asked US Americans, Inughuit, and Maasai to rate how important (“the degree to which the virtue is helpful to the individual and to society, and the degree to which it is valued by society”, p. 299) and how desirable for children each of the character strengths is. In these three very different cultures the large majority of the participants rated all the character strengths as important and desirable.



Furthermore, Park, Peterson, and Seligman (2006) investigated the prevalence of the character strengths in a huge web-based study of more than 100,000 adults. All of them filled in the VIA-IS in English language. Park et al. (2006) compared the strengths means and rankings in 54 nations (e.g., Azerbaijan, Mexico, and Zimbabwe) with at least 20 participants representing each nation. Means of the VIA-IS scales ranging from 2.84 to 4.12 in the different nations indicated that the character strengths-related statements of the VIA-IS seemed to be endorsed by individuals across cultures. Interestingly, Park et al. (2006) found high consistencies in the rank order of means across nations as rank order of the strengths was highly correlated between nations (all correlation coefficients exceed .70; most were above .90). The most prevalent (i.e., numerically highest means) character strengths were kindness, fairness, honesty, gratitude, judgment, love, and humor. The least prevalent character strengths (i.e., numerically lowest means) were prudence, modesty, and self-regulation.

Researchers across the globe are interested in the research of character strengths and the VIA-IS was therefore studied within different cultures and nations. For example, samples come from (references in brackets make no claim of being complete):

- Africa (Hutchinson, 2009 [also examined in Hutchinson, Stuart, & Pretorius, 2010, 2011]; Khumalo et al., 2008)
- Brazil (Rosenstein, 2010)
- Canada (Farrell, 2007)
- China (Duan et al., 2011; Bai, 2011)
- Croatia (Brdar, Anic, & Rijavec, 2011; Brdar & Kashdan, 2010; Miljković & Rijavec, 2008)
- German speaking countries (Germany, Austria, Switzerland; Müller & Ruch, 2011; Peterson, Ruch, Beermann, Park, & Seligman, 2007; Proyer & Ruch, 2009, 2011;

Ruch, Huber, Beermann, & Proyer, 2007; Ruch, Proyer, Harzer et al., 2010; Ruch, Proyer, & Weber, 2010)

- India (Choubisa & Singh, 2011; Singh & Choubisa, 2009, 2010)
- Israel (Littman-Ovadia, & Lavy, 2012, in press; Littman-Ovadia & Steger, 2010)
- Japan (Otake, Shimai, Ikemi, Utsuki, Peterson, & Seligman, 2005; Shimai, Otake, Park, Peterson, & Seligman, 2006)
- Norway (Matthews, Eid, Kelly, Bailey, & Peterson, 2006)
- United Kingdom (Linley et al., 2007; Linley, Nielsen, Gillett, & Biswas-Diener, 2010)
- USA (Ahmed, 2009; Aylett, 2004; Berman, 2007; Diessner, Davis, & Toney, 2009; Diessner, Solom, Frost, Parsons, & Davidson, 2008; Karris, 2007; Moore, 2010; Park & Peterson, 2010; Riddle & Riddle, 2007; Stahl & Hill, 2008)

Above studies on methodological issues of the VIA-IS a lot of research was done on correlates of the character strengths. The next sections summarize the research done with the VIA-IS to investigate correlates of character strengths in general life and within the work context.

### **Overview on Research on Correlates of Character Strengths in General Life**

Between 2003 and May 2012 a total of 78 research papers (i.e., 6 book chapters, 54 journal articles, and 18 doctoral dissertations) have been published utilizing the VIA-IS for original psychometric research on character strengths. There are two lines of research on character strengths with the first one being most often applied. The first line of research refers to the stipulation that, although character strengths are morally valued in their own right, they produce desirable outcomes (Peterson & Seligman, 2004). It was hypothesized that character strengths are associated with various indices of fulfillment and satisfaction (Park & Peterson, 2007) and that different character strengths are relevant for different life

related criteria (Park, Peterson, & Seligman, 2004a, b). Research in this line investigated correlates of character strengths across people to find out which character strengths go along with which correlates.

The second line of research builds upon the hypothesis that the exercise of character strengths is fulfilling (Park & Peterson, 2007). “Some settings and situations lend themselves to the development and/or display of strengths, whereas other settings and situations preclude them” (Peterson & Seligman, 2004, p. 11). On other words, the signature strengths-related fit between a person and his or her activities within a certain environment may lead to various positive outcomes. Research in this line investigated the correlates and consequences of strength-use across character strengths. The two following sub-sections summarize the findings of those two lines of research (i.e., across people and across character strengths).

**Research across people.** Most of the research on the character strengths was done investigating the relationships between character strengths and *satisfaction with life*. More than half of the papers ( $n = 36$ ) addressed this topic (e.g., Brdar et al., 2011; Khumalo et al., 2008; Lounsbury, Fisher, Levy, & Welsh, 2009; Park et al., 2004a, b; Peterson, Park, & Seligman, 2006; Peterson et al., 2007; Proyer, Gander, Wyss, & Ruch, 2011; Ruch et al., 2007; Ruch, Proyer, & Weber, 2010; Shimai et al., 2006; Yanez, 2007). Across different methods (self- vs. peer-ratings, paper-pencil vs. web-based testing, college students vs. community samples/adults) the VIA-IS showed high positive correlations up to  $r = .59$  with measures of satisfaction with life (Park et al., 2004a; correlation between hope and satisfaction with life). Above all, hope, zest, gratitude, curiosity, and love were the character strengths with the strongest relationships to satisfaction with life. More cognitive strengths like creativity, beauty, and modesty were less related to life satisfaction. However, none of the 24 character strengths showed negative correlations with life satisfaction. An intervention study very recently proved this causal relationship between the character strengths and

satisfaction with life as well as that some of the strengths might be more important than others for life satisfaction (see Proyer, Ruch, Buschor, in press).

Cross-sectional research showed that character strengths went along with *recovery from illness and traumatic experiences*. Character strengths scores tended to be lower in individuals who did not recover from a physical illness or psychological disorder compared to individual who had fully recovered (Peterson et al., 2006;  $N_{\text{Total}} = 2'087$  adults [not recovered:  $n_{\text{from a physical illness}} = 201$ ,  $n_{\text{from a psychological disorder}} = 115$ ]). Bravery, kindness, and humor augmented satisfaction with life during a physical illness (e.g., chronic pain, obesity, and cancer) like beauty and love of learning did for psychological disorders (e.g., depression, eating disorders, and anxiety). The more traumatic events (e.g., life-threatening accidents, sexual assaults, and physical assaults) participants experienced, the higher their character strengths scores tended to be (Peterson et al., 2008;  $N_{\text{Total}} = 1'739$  adults [ $n_{0 \text{ events}} = 757$ ;  $n_{1 \text{ event}} = 438$ ;  $n_{2 \text{ events}} = 438$ ;  $n_{3 \text{ events}} = 309$ ;  $n_{4+ \text{ events}} = 83$ ]). The strongest effects were observed for bravery, creativity, beauty, and leadership. Interestingly, the relationship between modesty and looking forward to each day (as one aspect of well-being) increased with the number of traumatic events someone had experienced (Park et al., 2004b;  $N = 1'738$  adults). However, due to cross-sectional data, it was not possible to clarify causality. Both directions are reasonable: (a) character strengths help to recover, because they “determine how an individual copes with adversity” (Peterson & Seligman, 2004, p. 17). (b) Character strengths develop with life circumstances, because they are malleable (Peterson & Seligman, 2004).

The latter was supported by a cross-sectional study comparing the mean strengths scores before and after 9/11 (Peterson & Seligman, 2003). The strengths near to the theological virtues (i.e., gratitude, hope, kindness, leadership, love, religiousness, and teamwork) increased (Peterson & Seligman, 2003;  $N_{\text{before}} = 906$  adults;  $N_{1 \text{ month after}} = 295$  adults;  $N_{2 \text{ months after}} = 195$  adults). Moreover, there was also first evidence from intervention

studies that character strengths can be trained (Namdari, Molavi, Malekpour, & Kalantari, 2009;  $N = 40$  clients with dysthymic disorder; Rashid, 2003;  $N = 65$  undergraduate and graduate students). The former was supported by the finding that pre-treatment scores in hope, beauty, and religiousness predicted lower scores in post-treatment depression when controlling for pre-treatment depression in clients with Major Depression Disorder (Huta & Hawley, 2010;  $N = 54$  adult of an outpatients' department). One might also think of a reciprocal relationship. Further research utilizing longitudinal research designs is needed to further address this question.

There were many more constructs whose relations to the character strengths have been studied showing further evidence for the validity of the VIA-IS and the role of character strengths in the general life (e.g., attachment security, other personality traits, and risk behavior). For example, secure attached individuals mostly had higher character strengths scores than preoccupied, dismissive, and fearful attached ones (Peterson & Park, 2007;  $N = 32,634$  adults). Strongest effects were found for love followed by hope and zest. Love was lower for people high in attachment avoidance what in turn went along with lower scores in satisfaction with life (Lavy & Littman-Ovadia, 2011;  $N = 394$  undergraduate students). Attachment anxiety went along with lower scores in hope and curiosity reflecting the basic fear of the "bad future" and new things, which in turn were associated with lower scores in satisfaction with life (Lavy & Littman-Ovadia, 2011).

Studies examining the relationships between character strengths and personality traits indicated a meaningful overlap between these two groups of concepts but not redundancy (e.g., Choong & Britton, 2007; Macdonald et al., 2008; Nettle, Schnitker, & Robins, 2011; O'Neil, 2007; Steger, Hicks, Kashdan, Krueger, & Bouchard, 2007). Character strengths are new personality constructs. Therefore one might further analyze the relations to more traditional personality constructs like the dimensions of the Five-Factor Model (cf., Costa &

McCrae, 1992) or Eysenck's superfactors (cf., Eysenck & Eysenck, 1991) as well. However, the present thesis concentrated on the role character strengths play for positive experiences and positive behavior at work. Consequently, these relations were not compared to those more traditional personality constructs have with positive experiences and positive behavior at work. This might be done in a next step.

Furthermore, patience was especially related to strengths of justice, temperance, and humanity (Schnitker & Emmons, 2007;  $N = 324$  undergraduate students). Above all, fairness, forgiveness, leadership, teamwork, and kindness were the strengths numerically most strongly associated with patience. Finally, character strengths were associated with less risky behaviors. For example, love of learning and hope were associated with lower scores in need for treatment to be prevented from recidivism in female inmates in a Canadian federal prison (Farrell, 2007;  $N = 77$ ). Higher scores in prudence were related to lower scores in several risk behaviors (i.e., alcohol problems, use of prescription drugs, and use of illegal drugs; Karris, 2007;  $N = 384$  undergraduate students). Comparable results were found for drinking alcohol or not in a sample of students being under the legal drinking age (Logan, Kilmer, & Marlatt, 2010;  $N = 425$ ) as well as for sexual behaviors and related risks in African-American adolescents (Ma et al., 2008;  $N = 383$ ). Again, causality needs to be addressed in future research.

**Research across character strengths.** Seligman et al. (2005) conducted a random-assignment, placebo-controlled Internet study to examine the effect of interventions on happiness and depressive symptoms. Among the interventions was one addressing the knowledge of one's signature strengths (here: the five highest individual strengths) and the usage of them in a new and different way every day for one week ( $n = 66$ ;  $n_{\text{placebo}} = 70$ ). It was the best intervention in terms of enhancement of happiness, reduction of depressive symptoms, and sustainability across six months (also see Rust, Diessner, & Reade, 2009, for

a similar study with 131 undergraduate students with  $n = 76$  in the strengths intervention group).

Littman-Ovadia and Steger (2010) utilized a single item measure of the deployment of the 24 character strengths in daily work and found that a sum score of strengths deployment was related to meaning in life and psychological well-being ( $N = 100$  15-18year olds). This was similar to the findings utilizing a more general measure of strengths use (e.g., “I am able to use my strengths in lots of different ways”, and “Using my strengths is something I am familiar with”; Govindji & Linley, 2007). For example, baseline strengths use predicted lower stress scores as well as higher scores in self-esteem, vitality, and positive affect three and six months later (Wood, Linley, Maltby, Kashdan, & Hurling, 2011;  $N = 207$  adults). Strengths use was also related to subjective well-being even when controlling for self-efficacy and self-esteem (Proctor, Maltby, & Linley, 2011;  $N = 135$  undergraduate students). It also was relevant for the progress in reaching short-term goals, which in turn was related to need satisfaction and well-being (Linley et al., 2010;  $N = 240$  undergraduate students).

That the character strengths as measured with the VIA-IS were meaningfully associated with various correlates can be interpreted as evidence for the relevance of the concepts of character strengths in research as these studies show their validity. The results regarding strengths-use provided evidence for the assumption that strengths-use is fulfilling and satisfying. As the focus of interest in the present thesis is the role of character strengths at work, the next section gives as a first step an overview on research utilizing the VIA-IS in the work-context. This section works out the general relevance of the VIA-IS in the work-context. As a second step, the subsequently following section highlights the open issues regarding the role of character strengths at work that are relevant for the present thesis.

### **What Do We Know About the Role of Character Strengths at Work?**

Little research has been conducted on the role of character strengths, as described in the VIA classification, in the work environment. This is a bit surprising in the light of the fact that the work is a very central part in life (Peterson & Park, 2006; Peterson et al., 2010) and that the workplace is regarded as a natural environment for positive psychology (Park & Peterson, 2007). Until May 2012, 13 papers described research on the role of character strengths at work (i.e., 6 journal articles, 1 book chapter, 6 doctoral dissertations). Again, presentation of research is grouped into the two lines of research. The first one focuses on correlates of character strengths across people to find out which character strengths go along with which correlates (i.e., research across people). The second one considers the indirect relationships between the character strengths and the outcomes of interest by referring to the application of the individuals' signature strengths (i.e., research across character strengths).

**Research across people.** The VIA-IS proved to be able to discriminate between different vocational groups like military vs. civilian samples (e.g., Banth & Singh, 2011; Matthews et al., 2006). Two military samples (103 West Point cadets and 141 Norwegian Naval Academy cadets) were more similar to each other than either was to a US civilian sample ( $N = 838$ ; Matthews et al., 2006). Army officers ( $N = 24$ ) had higher scores in the strengths of wisdom and knowledge, bravery, perseverance, social intelligence, teamwork, leadership, and self-regulation whereas civilian managers ( $N = 24$ ) had higher scores in kindness, love, and forgiveness (Banth & Singh, 2011).

Furthermore, self-ratings in the character strengths as measured with the VIA-IS differed for workers with and without leadership tasks (Brooks, 2009; Hernández, 2009; Balbinot, 2011). Managers had higher scores than non-managers in the strengths of wisdom and knowledge (except love of learning), in the strengths of courage (except honesty), leadership, social intelligence, and self-regulation (Hernández, 2009;  $N = 469$ ). Employees in the financial sector with leadership tasks scored higher in leadership, perseverance, and hope



than those without leadership tasks (Balbinot, 2011;  $N = 374$ ). Leadership was also associated with character strengths on correlational level. For example, number of employees to supervise was especially related to leadership, bravery, and forgiveness (Balbinot, 2011;  $N = 374$ ). Bravery as well as kindness and hope predicted self-perceived transformational leadership in students of military academy (Brooks, 2009;  $N = 93$ ).

Additionally, work-related well-being (i.e., regarding the job as a calling and job satisfaction) was studied as well. For example, calling was especially related to zest, gratitude, love, and hope (Gorjian, 2006 [ $N = 226$  nurses and social workers]; Peterson, Park, Hall, & Seligman, 2009 [ $N = 9,803$  workers from various occupations]; Smith, 2010 [ $N = 23$  employees from financial or educational branch]). The character strengths zest, hope, gratitude, curiosity, love, religiousness, and humor were the ones most robustly related to work satisfaction across job categories (e.g., professional, blue collar, and homemaker; Peterson et al., 2010 [ $N = 7,347$  workers from various occupations]; also see Smith, 2010). Furthermore, college satisfaction in undergraduate students was especially related to hope, self-regulation, perseverance, and prudence (Lounsbury et al., 2009 [ $N = 237$ ]; West, 2006 [ $N = 228$ ]). Gander, Proyer, Ruch, and Wyss (in press) showed that different character strengths were meaningfully associated with different work-related behavior. For example, persistence, zest, and love of learning were numerically strongest related to career ambition. Active coping was especially associated with hope, zest, persistence, and bravery. Furthermore, employees with higher scores in the character strengths tended to have healthier work behavior (Gander et al., in press).

Very first evidence exists for the role of character strengths for objective work-related outcomes in contrast to the subjective job satisfaction and seeing the job as a calling. Great point average (GPA; self-reported) in undergraduate psychology students went along with the character strengths of courage, wisdom and knowledge (except creativity), justice, as well as

prudence and self-regulation (Lounsbury et al., 2009;  $N = 237$ ). Balbinot (2011;  $N = 374$ ) found that zest, perseverance, hope, creativity, and love were associated with the self-reported supervisor's performance rating of the last year (single item measurement for global job performance) in employees of the finance branch. Furthermore, bravery and zest went along with a composite of job level and total compensation as operationalization of objective career success (self-reports; Balbinot, 2011). Finally, the character strengths of wisdom and knowledge went along with performance on a time-restricted creative task (i.e., unusual uses for common household items; Avey, Luthans, Hannah, Sweetman, & Peterson, 2012;  $N = 974$  workers from various occupations).

**Research across character strengths.** Littman-Ovadia and Steger (2010) found higher scores in job satisfaction and meaning in work for those people with higher scores in strengths deployment in general ( $N = 102$  woman working in an organization providing many different services). These findings indicate that character-strengths related fit might play an important role for work-related outcomes.

### **What Do We Not Know About the Role of Character Strengths at Work?**

The results on the relations between character strengths (use) and work-related outcomes like job satisfaction, calling, meaning at work, and global ratings of job performance primarily rely on cross-sectional and self-reported data. Studying primarily self-reported data might lead to artifact results because of inflated correlations due to common method bias (Doty & Glick, 1998). Additionally, relations with soft outcomes have been of main interest. Hence, studying self- and other-reported data on soft (i.e., self-reported positive experiences like job satisfaction and meaning at work) and hard (i.e., supervisor-rated positive behavior like job performance) outcomes might help to get a better understanding of the role of character strengths at work. Furthermore, investigating mixed samples of employees from various occupations might facilitate to discover findings that can

be generalized across different vocations. Greatest interest of the present thesis was in the results, which could be found across several studies as well as across self- and other-rated constructs of interest.

Notably, nearly all results on the role of character strengths at work referred to their relationships with correlates across people that rated themselves in questionnaires measuring the constructs of interest. Kleinmann and Strauß (1998) as well as many others (e.g., Caplan, 1987; Edwards, 1996; Kristof, 1996) highlighted the importance of a congruency between occupational demands and individual needs. Kleinmann and Strauß stated that such a fit ascertains a company's competitive edge (i.e., high level of job performance) and the employees' well-being (i.e., high level of positive experiences). Therefore, there was a need to study the role of character-strengths related person-job fit for job performance as a positive behavior and positive experiences. Also within the positive psychology the character strengths-related person-job fit has been highlighted. Peterson and Seligman (2004) stipulated the use of the signature strengths might lead to positive outcomes (e.g., rapid learning curve, invigoration instead of exhaustion). In line with this Park and Peterson (2007) reported, that "people most valued [...] a job [...] congruent with their own particular strengths of character" (Park & Peterson, 2007, p. 299).

**Character strengths and positive behavior at work.** Researchers in the field of positive psychology postulated that morally positively valued traits – character strengths – help people to flourish and lead them to good and right behavior (Peterson & Seligman, 2004). The right behavior can be being productive or profitable (Peterson & Park, 2006), for example, observed as the performance at work. Balbinot (2011) provided initial results on the relationships between character strengths and job performance operationalized as the supervisor's performance rating of the last year (single item measurement). Furthermore, the fit between a person and the work environment has often been highlighted in psychological

research as being decisive for job performance (e.g., Caplan, 1987; Kristof, 1996). However, this has not been studied yet with respect to the character strengths and was therefore investigated within the scope of the present thesis. To get a broader overview on how the character strengths relate to job performance, both constructs needed to be examined with respect to their currently known dimensions. With the VIA classification of strengths Peterson and Seligman (2004) provided an extensive framework for the investigation of character strengths. The work groups around Borman and Motowidlo provided a detailed definition of job performance (Borman & Motowidlo, 1993; Borman, Penner, Allen, & Motowidlo, 2001; Coleman & Borman, 2000; Motowidlo, Borman, & Schmit, 1997; Van Scotter & Motowidlo, 1996). Their definition is presented in the following to describe the positive behaviors that were focused on within the present thesis.

*Job performance* is “the aggregated value to the organization of the discrete behavioral episodes that an individual performs over a standard interval of time” (Motowidlo et al., 1997, p. 71). That means that an individual behaves in a certain way that partly counts for the organization (e.g., doing a job task and helping co-workers vs. lunch break). This behavior can be either task or context related. Task and contextual factors accounted nearly equal amounts of variance in overall performance ratings (Borman, White, & Dorsey, 1995). Employees do not only carry out job-specific tasks, but also undertake work-related actions that go beyond their job descriptions (Borman & Motowidlo, 1993; Brief & Motowidlo, 1986). Those behaviors are, for example, communication among different employees with a team, coordination of actions, and to follow instructions (Van Scotter & Motowidlo, 1996). They are essential for a company to succeed and survive (Katz & Kahn, 1978).

*Task performance* is the in-role behavior as it is defined in job descriptions (Katz, 1964; Williams & Anderson, 1991). It refers to the transformation of raw materials into the goods and services, that are the organization’s products and to activities that service and

maintain the technical core by replenishing its supply of raw material (Borman & Motowidlo, 1993; Van Scotter & Motowidlo, 1996). *Contextual performance* is a set of interpersonal and volitional behaviors that support the social and motivational context in which organizational work is accomplished. It does not contribute through the organization's core technical processes, but maintains or improves organizational, social, or psychological environment necessary for the technical core to function effectively and efficiently (Borman & Motowidlo, 1993; Van Scotter & Motowidlo, 1996). Contextual performance is also known as citizenship performance and extra-role behavior (e.g., Borman et al., 2001; Coleman & Borman, 2000; Williams & Anderson, 1991) and is similar (but not identical) to organizational citizenship behavior (Motowidlo, 2000). Dimensions of contextual performance are job dedication, interpersonal facilitation, and organizational support.

*Job dedication* means that an employee persists with extra enthusiasm when necessary to complete own tasks successfully and volunteers to carry out tasks that are not formally part of the job (Van Scotter & Motowidlo, 1996). *Interpersonal facilitation* includes helping and cooperating with others, assisting co-workers' performance. An employee encourages cooperation, encompasses a range of interpersonal acts that help maintain the interpersonal and social context needed to support effective task performance in an organizational setting (Van Scotter & Motowidlo, 1996). *Organizational support* means following organizational rules and procedures as well as endorsing, supporting and defending organizational objectives (Borman et al., 2001; Coleman & Borman, 2000). It is the loyalty to the organization someone is employed at.

Being different dimensions of job performance, task performance, and contextual performance (with its facets interpersonal facilitation, job dedication, and organizational support) are inter-correlated. Several publications reported the relations among these constructs (e.g., Bachrach, Powell, Bendoly, & Richey, 2006; Motowidlo & Van Scotter,

1994; Piercy, Cravens, Lane, & Vorhies, 2006; Van Scotter & Motowidlo, 1996; see Appendix A for a more comprehensive overview). Correlation coefficients ranged between .04 (task performance and interpersonal facilitation) and .82 (job performance and task performance). Correlations coefficients greater .60 resulted when composite measures were used for higher-level constructs like contextual performance. Item overlap between lower-level and higher-level constructs then led to stronger relationships. Studies without the problem of item-overlap usually found relations between .25 and .54 among the job performance dimensions indicating that they are related to each other but distinct constructs.

When studying the relationships between character strengths and these four dimensions of job performance at least two different aspects were to be considered. These were (a) the direct relationships between the 24 character strengths and the four dimensions of job performance, and (b) the role of the character strengths-related fit (defined as the number of the signature strengths useful at work) between a person and his/her workplace. These two aspects have not been addressed yet and were studied in Part I of the present thesis.

**Character strengths and positive experiences at work.** Positive experiences (also labeled as valued subjective experiences; cf., Peterson, 2006a; Seligman, 2000) are manifold. Seligman (2000) differentiated between positive experiences towards the past (e.g., well-being, contentment, and satisfaction), the future (e.g., hope and optimism), and the present (e.g., flow and happiness). The present thesis focused on past- and present-related positive experiences, namely satisfaction as well as pleasure, engagement, and meaning as routes to happiness. These positive experiences are briefly introduced and defined in the following paragraphs.

*Satisfaction with life* is defined as a global, cognitive assessment of the quality of life (Diener, Emmons, Larsen, & Griffin, 1985). As the research conducted within the present

thesis was in the work context, the focus was on the domain satisfaction relating to work (Diener, Suh, Lucas, & Smith, 1999), labeled as job satisfaction in present thesis. As stated earlier character strengths were related to both, satisfaction with life and job satisfaction. Furthermore, a good person-work environment fit was related to job satisfaction (Verquer, Beehr, & Wagner, 2003). In line with this, Littman-Ovadia and Steger (2010) found a relationship between strengths deployment (single item measurement for each of the strengths on the degree to deploy them) and job satisfaction.

Pleasure, engagement, and meaning were summarized to the three orientations to *happiness* to describe three separate yet related routes of life to obtain happiness that can be pursued simultaneously (Peterson, Park, & Seligman, 2005b). *Pleasure* (also labeled as the pleasurable life) describes the route to happiness through hedonism by “maximizing pleasure and minimizing pain” (Peterson et al., 2005b, p. 25). Pleasure has been shown to be numerically highest related to the character strengths humor, zest, and hope in Swiss and American samples (Peterson et al., 2007; also see Ruch, Proyer, & Weber, 2010). With respect to the work context, pleasure can be described as the extent to which the job allows for pleasurable experiences and prevents from negative experiences. The importance of a “fit” between characteristics of a person and the attributes of the work environment has been recognized for pleasure at work (Edwards, 1996) as well. However, the fit and its role for pleasure at work have never been studied with respect to the character strengths.

The second orientation to happiness is *engagement* (also labeled as the engaged life), which is based on Csikszentmihalyi’s (1990) concept of flow. Analyses of the direct relationships between engagement and character strengths showed that engagement numerically highest correlates with zest, curiosity, hope, and perseverance in Swiss and American samples (Peterson et al., 2007). Engagement can be reached by using one’s strengths (Seligman, 2002). Referring to the work-context, work (circumstances) should

allow the use of strengths to allow for engagement. Notably, the relevance of fit between a person and an activity has been highlighted before, as flow is the state of mind when being absorbed by an engaging activity (Csikszentmihalyi, 1990). This has also been found within the work-context as a job task that matched an individual's abilities was related to flow as well (Harter & Blacksmith, 2010). However, this has not been investigated yet with respect to the character strengths.

The life of *meaning* reflects the concept of eudemonia ("being true to one's inner self/demon"; Peterson et al., 2005b, p. 26). In general, numerically highest correlation with meaning showed religiousness, gratitude, hope, and zest in Swiss and American samples (Peterson et al., 2007). Meaning describes the route of achieving happiness by identifying one's character strengths, cultivating them, and living in accordance to them to achieve a higher purpose (Peterson et al., 2005b). Accordingly, work allows for meaning when the individual character strengths can be used to do the work tasks. In line with this, Littman-Ovadia and Steger (2010) found a relationship between strengths deployment (single item measurement for each of the strengths) and meaning at work.

**Character strengths-related person-job fit.** Overall, previous research indicated character strengths-related person-job fit would be important for positive experiences at work. However, current research on strengths deployment or strengths use (e.g., Littman-Ovadia & Steger, 2010; Wood et al., 2011) did not discriminate between the two basic influences on actual behavior. Firstly, like for every trait (cf., Fishbein & Ajzen, 2010; Saucier, Bel-Bahar, & Fernandez, 2007) the individual needs to possess the strength to a certain degree to be able to show strength-relevant behavior (i.e., apply it). Secondly, the situational circumstances at a certain environment (e.g., at the workplace or in private life) need to allow or demand for a strength, as trait-related behavior needs conducive circumstances to be displayed (Saucier et al., 2007; Ten Berge & De Raad, 1999). In the



currently existing studies, measures of strengths deployment or strengths use these two influences are confounded. Littman-Ovadia and Steger (2010) utilized single item measurements for each of the character strengths and asked the participants to rate the degree to which they deploy each of the character strengths. Wood et al. (2011) did not use items that referred to each of the character strengths but to strengths in general (Strengths Use Scale; Govindji & Linley, 2007). Participants rated the amount of agreement on 14 very broad items like “I always play to my strengths”, “I use my strengths to get what I want in life”, and “I am able to use my strengths in lots of different situations”.

Therefore, in the present thesis this confounding problem was addressed by measuring the possession of strengths and the situational influences on the character strengths independently from each other. The former could be measured with the VIA-IS. The latter needed a measure asking for the usefulness of the character strengths or the demands concerning the character strengths at work without referring directly to the application or deployment. The application of character strengths then was a combined score paying attention to the level of possession and the level of usefulness of the character strengths at work as cut-off values. As the importance of signature strengths has been highlighted earlier, main focus will be on the seven highest strengths within an individual (i.e., the signature strengths). That means that a character strength was only defined as an applied signature strength when (1) it was among the seven highest within an individual. (2) An individual needed to possess this strength to at least a small degree to be able to show strength-related behavior. Furthermore, (3) the usefulness of this strength must have been rated as beneficial as opposed to be detrimental. The first two criteria based on the scores in the VIA-IS and the third one based on a measure asking for the usefulness of or demands on the character strengths at work. This is further discussed in the three parts of the present thesis. The role of character strengths-related person-job fit for positive behavior at work was studied in Part I

of the present thesis The role of character strengths-related person-job fit for positive experiences at work was studied in Part II and III.

### **Aims of the Thesis**

The prime aim of the thesis was to get further understanding in the role of character strengths at the workplace with the focus on positive behavior and positive experiences. Positive behavior was studied with respect to the four dimensions of job performance as defined by the research group around Borman and Motowidlo, namely task performance, job dedication, interpersonal facilitation, and organizational support. The positive experiences of interest were job satisfaction as well as pleasure, engagement, and meaning at work as past- and present-related positive experiences (Peterson, 2006a; Seligman, 2000, 2002). Within this thesis, the research is organized into three parts.

**Part I.** Part I of the thesis was aimed at investigating the relationships between 24 character strengths and four dimensions of job performance (i.e., task performance, job dedication, interpersonal facilitation, and organizational support) in a set of two studies. Firstly, it was examined how much variance of each of the dimensions of job performance can be explained by the 24 character strengths and how each of the character strengths was related to each of the dimensions of job performance. Secondly, the role of strengths-related person-job fit for these dimensions of job performance was investigated. Strengths-related person-job fit was defined here as the number of signature strengths beneficial at work. Employees did not only rate their character strengths and job performance, but also the usefulness (detrimental vs. neither nor vs. beneficial) of each of the character strengths for doing their work. A set of two samples was investigated to check for the robustness and replicability of the results. Furthermore, performance ratings in sample 2 were not only based on self-descriptions, but were also backed by supervisors' judgments on task performance, job dedication, interpersonal facilitation, and organizational support. Supervisor-ratings for

the dimensions of job performance and self-rated character strengths were used to control for inflated correlations due to common method bias (Doty & Glick, 1998). Greatest interest was in the results, which could be found across the samples 1 and 2 as well as across self- and supervisor-rated dimensions of job performance.

**Part II.** Part II aimed at investigating the impact of strengths-related person-job fit on positive experiences at work. Person-job fit referred to the use of the individual signature strengths at the workplace. In Part I only a single item measure for the usefulness of each of the character strengths (i.e., also labeled as work-related situational circumstances on the character strengths) was utilized. Part II, in a first step, aimed at the development and validation of a measure, which comprised of more than one item referring to the usefulness of each of the character strengths and which had a clear theoretical background for its items (i.e., the Applicability of Character Strengths Rating Scales, ACS-RS). The role of strengths-congruent activities for positive experiences at work (i.e., job satisfaction, pleasure, engagement, and meaning) was investigated, in a second step, as a first application of the ACS-RS in combination with the VIA-IS.

**Part III.** As in Part II exclusively self-rating data was examined, the relationships of strengths-related person-job fit and positive experiences at work might have been artificially inflated due to common method variance (Doty & Glick, 1998). Consequently, it was decided to utilize peer-ratings for the description of the work-related situational circumstances on the 24 character strengths in Part III to check whether the results can be replicated or not. Furthermore, the role of strengths-related person-job fit for calling as an extreme form of subjective career success (Dobrow, 2004) was investigated. Individuals with a calling regard their work to be their purpose in life (Elangovan, Pinder, & McLean, 2011; Hall & Chandler, 2005), rather than a means for financial rewards (job) or advancement (career; Wrzesniewski, McCauley, Rozin, & Schwartz, 1997). Positive experiences at work such as pleasure,

engagement, meaning, and satisfaction with the job are inherent aspects of a calling (e.g., Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985; Dobrow, 2004; Novak, 1996; Wrzesniewski et al., 1997). Therefore, one might expect that positive experiences at work might contribute to the individuals' impression that their job is a calling. However, it was highlighted that a calling is expressed through the use of one's strengths as well (Nowak, 1996; Weiss, Skelley, Haughey, & Hall, 2004) what implies a direct relationship between strengths-related fit and calling as well. Consequently, it was examined whether the application of one's signature strengths at work directly facilitates calling or whether this relationship is mediated by positive experiences at work.

Despite the implicit assumption that the positive experiences and positive behavior at work are the result of character strengths, causality cannot be investigated in the present thesis due to the cross-sectional designs of the studies reported here. This thesis examined, whether character strengths are robustly associated with positive experiences and positive behavior across people and how the strengths-related person-job fit is related to positive experiences and positive behavior. Further research utilizing longitudinal design or intervention studies would be needed to prove the assumed causality.

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**Part I**

**Does Being Good Make the Performance at Work? The Role of Character Strengths for  
Task Performance, Job Dedication, Interpersonal Facilitation, and Organizational  
Support**

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Abstract

It was hypothesized that character strengths relate to job performance. Both constructs were investigated with respect to their currently known dimensions (i.e., 24 character strengths; four dimensions of job performance) to get a comprehensive overview of their co-occurrence. Two samples, 318 and 108 employees, respectively, filled in measures for character strengths as traits and their usefulness at work, and the job performance dimensions. For sample 2, also supervisors judged the employees' job performance. Based on this set of two samples we show replicable associations between character strengths and job performance (self-reports and supervisory ratings). Also the number of individual strengths that are beneficial at work related to job performance. These promising findings open a new field for research on human performance.

*Keywords:* character strengths; job performance; task performance; contextual performance; signature strengths



## Introduction

Researchers in the field of positive psychology postulate that morally positively valued traits – character strengths – help people to flourish and lead them to good and right behavior (Peterson & Seligman, 2004). The right behavior can be being productive or profitable (Peterson & Park, 2006). Therefore, it could be assumed that “being good” (i.e., the endorsement of character strengths) is related to good behavior at work (i.e., job performance). There is first empirical evidence that character strengths do matter at work. For example, character strengths are related to job satisfaction across different occupations (Peterson, Park, Hall, & Seligman, 2009; Peterson, Stephens, Park, Lee, & Seligman, 2010). The character strength capacity to love and be loved predicts accomplishments as a leader in cadets (Peterson & Park, 2006). The application of strengths at work relates to various positive outcomes like increasing productivity (up to 12.5%) and decreasing turnover rates (up to 50%) (cf., Hodges & Asplund, 2010).

Taking theory and first empirical evidence together, it is to be expected that character strengths substantially relate to job performance. To get a broader overview of how the character strengths and job performance co-occur, both constructs will be examined with respect to their currently known dimensions (i.e., 24 character strengths; four dimension of job performance: task performance as well as job dedication, interpersonal facilitation, and organizational support as dimensions of contextual performance<sup>1</sup>). Studying exclusively self-rating data can be criticized as the relationships might be artificially inflated due to the common method variance (Doty & Glick, 1998) and single sample studies do not provide

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<sup>1</sup> Sometimes a further dimension of job performance is discussed in literature, namely counterproductive behavior, which has a negative value for the organizational effectiveness (e.g., Viswesvaran & Ones, 2000). However, character strengths are classified as positive traits (Peterson & Seligman, 2004) and are, thus, more likely related to positive behavior such as task and contextual performance. Therefore, it was decided not to investigate counterproductive behavior in the present research.

information on replicability of results. Hence, a study was conducted including a total of two samples of employees and one sample of supervisors from various occupations. Hence, this paper does not only present first results on the relationships between character strengths and job performance (both measured by self-ratings), but also a replication utilizing another sample of employees and an extension with supervisory ratings in the dimensions of job performance. Although, the present paper describes cross-sectional data, results can indicate, which character strengths might be worth considering in (research on) personnel selection and human resource development as promising predictors for job performance.

### **The 24 Character Strengths**

The Values in Action (VIA) classification of strengths (Peterson & Seligman, 2004) includes 24 character strengths. Cognitive strengths like creativity (synonyms are originality, ingenuity), curiosity (interest, novelty-seeking, openness to experience), judgment (open-mindedness, critical thinking), love of learning, and perspective (wisdom) entail the acquisition and use of knowledge. Emotional strengths like bravery (valor), perseverance (persistence, industriousness), honesty (authenticity, integrity), and zest (vitality, enthusiasm, vigor, energy) involve the exercise of will to accomplish goals in the face of external or internal opposition. Interpersonal strengths like capacity to love and be loved (short: love), kindness (generosity, nurturance, care, compassion, altruistic love, "niceness"), and social intelligence (emotional intelligence, personal intelligence) involve "tending and befriending" others. Civic strengths like teamwork (citizenship, social responsibility, loyalty), fairness, and leadership underlie healthy community life. Strengths that protect against excess are forgiveness (mercy), modesty (humility), prudence, and self-regulation (self-control). Strengths of transcendence are appreciation of beauty and excellence (awe, wonder, elevation; short: beauty), gratitude, hope (optimism, future-mindedness, future orientation), humor (playfulness), and religiousness (spirituality, faith, purpose).

Character strengths are positively valued and desired across cultures by definition and were selected considering this notion (Peterson & Seligman, 2004). They are, therefore, different from the personality traits that emerged from the psycholexical approaches of personality (e.g., Angleitner, Ostendorf, & John, 1990; Norman, 1963). Within the Big Five tradition valued, desirable traits were excluded intentionally as Allport (1937) regarded character as being unnecessary to psychologically describe personality. He highlighted that character reflects valued personality traits and values were a topic for ethics but not for psychology having the task to describe but not to evaluate. Studies examining the relationships between character strengths and personality traits indicated a meaningful overlap between these concepts but not redundancy (e.g., Macdonald, Bore, & Munro, 2008; Nettle, Schnitker, & Robins, 2011; Steger, Hicks, Kashdan, Krueger, & Bouchard, 2007).

Character strengths as positive traits manifest in an individual's behavior (Peterson & Seligman, 2004) and are, therefore, expected to relate to positive behavior in the workplace. Job performance can be seen as such a positive behavior in the workplace as it is defined as the aggregated value of the discrete behavioral episodes that an individual performs over a standard interval of time for the organization (Motowidlo, 2003). The relationships between character strengths and job performance have not been studied before and were targeted in the present paper. As different character strengths relate to different patterns of positive behavior and it was expected that different character strengths are associated with different dimensions of job performance.

### **The Dimensions of Job Performance**

Job performance can be task- (i.e., doing job-specific tasks) and context-related (e.g., coordination among team members, compliance with instructions) as both aspects account nearly equal amounts of variance in overall performance ratings (Borman, White, & Dorsey, 1995). *Task performance* is the in-role behavior as it is defined in job descriptions (Katz,

1964; Williams & Anderson, 1991). It refers to the transformation of raw materials into the goods and services that are the organization's products (e.g., selling merchandise, operating a production machine, and teaching) and to activities like replenishing the raw materials to maintain the technical core (Borman & Motowidlo, 1993). *Contextual performance* is a set of interpersonal and volitional behaviors that support the social and motivational context in which organizational work is accomplished. It does not contribute to the organization's core processes, but maintains or improves aspects in the organization necessary for the core to function well (Katz & Kahn, 1978; Van Scotter & Motowidlo, 1996). Contextual performance is also known as citizenship performance and extra-role behavior (e.g., Borman, Penner, Allen, & Motowidlo, 2001; Coleman & Borman, 2000; Williams & Anderson, 1991) and is similar (but not identical) to organizational citizenship behavior (Motowidlo, 2000). Job dedication, interpersonal facilitation, and organizational support are distinguishable dimensions of contextual performance (Borman et al., 2001; Coleman & Borman, 2000).

*Job dedication* (also labeled as conscientious initiative and job/task citizenship performance) means that an employee persists with extra enthusiasm – when necessary – to complete own tasks successfully. It further refers to voluntarily carrying out tasks that are not formally part of the job, and to ask for challenging tasks (Van Scotter & Motowidlo, 1996).

*Interpersonal facilitation* (also known as personal support and interpersonal citizenship performance) includes helping and cooperating with others as well as assisting co-workers to perform. Thereby interpersonal facilitation helps to maintain the interpersonal and social context needed to for effective task performance in an organizational setting (Van Scotter & Motowidlo, 1996). *Organizational support* (also labeled as organizational citizenship performance) is the following of organizational rules and procedures, endorsing, supporting and defending organizational objectives (Borman et al., 2001; Coleman & Borman, 2000).

### **The Relationships Between Character Strengths and Job Performance**

In their theory about individual differences in task and contextual performance, Motowidlo, Borman, and Schmit (1997) highlight that personality variables are more strongly related to contextual performance (dimensions) than to task performance. Task performance is stronger associated with cognitive ability variables. Nevertheless, they expect that traits have an impact on task performance as well and ability on contextual performance. In line with this assumption, we expected stronger associations of the character strengths with the contextual performance dimensions than with task performance. However, substantial relations between character strengths and task performance are expected as well.

However, we did not expect all character strengths to be related to all dimensions of job performance. Instead, more detailed hypotheses about the relationships between single character strengths and the job performance dimensions were formulated content-driven.

*Firstly*, across different occupations, task performance may be especially related to perseverance, honesty, and self-regulation, as these character strengths help finishing work tasks and judging the quality of one's work properly. This behavior seems to be generally profitable at work, whereas other character strengths do not seem to relate to profitable behaviors by content. *Secondly*, the interpersonal and civic strengths directly refer to human interaction in groups and in dyads. They should therefore be especially associated with interpersonal facilitation and organizational support. *Thirdly*, as job dedication entails persisting with extra enthusiasm, it is expected to profit from character strengths like perseverance and self-regulation. Furthermore, job dedication includes asking for challenging tasks, and therefore, relations to bravery, curiosity, and love of learning are also expected. Bravery may go along with venturing on difficult task. Curiosity and love of learning enable the interest in new assignments.

Furthermore, there may not only be direct but also indirect associations between the 24 character strengths and the four dimensions of job performance. Character strengths can be ranked for each individual with respect to how central they are to the person. Peterson and Seligman (2004) postulate that most people have between three and seven core or “signature” strengths that are most central for the person. Signature strengths are the ones that “a person owns, celebrates, and frequently exercises” (p. 18). Especially those activities congruent with the individual’s signature strengths are fulfilling and most valued (Peterson & Seligman, 2004). In line with this, Park and Peterson (2007, p. 299) reported, “people most valued [...] a job [...] congruent with their own particular strengths of character”. Therefore, we assumed an impact of the degree of congruence between the job tasks and the individual signature strengths on the dimensions of job performance. This congruence should not to be confused with but might be similar to the fit between a person and the work as often highlighted in psychological research as being decisive for job performance (e.g., Caplan, 1987; Kristof, 1996). The congruence between the job tasks and the individual signature strengths can be interpreted as both a need-supplies and a demands-abilities related fit (cf., Kristof, 1996). The individual’s signature strengths form the individual’s need to be allowed to behave congruent to those strengths. If the job tasks do allow for them, the job supplies this need. However, the job tasks may demand strengths-related behavior that a person is able to show due to the degree of possession of the relevant strengths. The former one was most of interest here as the starting point was the constellation of signature strengths within the individual and their usefulness at work, but not the strengths most required for the job tasks.

In the present research the operationalization of the degree of congruence between the job tasks and the individual signature strengths was based on the employee’s self-description and the same employee’s description of the job regarding the character strengths. For the *description of the job*, it will be of interest how useful (i.e., the degree of being beneficial vs.

detrimental for doing the job tasks) character strengths-related behavior is for the completion of the work tasks. Character strengths-related behavior might not always be useful for completing the work tasks. For example, too much curiosity when governing very sensitive data might go along with too much time spent reading individual entries (i.e., nosiness; Peterson, 2006). For the *description of the employee*, his or her individual signature strengths are of relevance. The individually determined degree of the congruence between the job tasks and the individual signature strengths is defined as the number of the individual's signature strengths that are beneficial at work.

### **Aims of the Present Study**

The present paper aimed at investigating the relationships between the 24 character strengths and the four dimensions of job performance. Specific character strengths were expected to relate to specific dimensions of job performance as both refer to specific behaviors; character strengths to behavior in general and job performance to behavior at work. Two independent samples were studied to test for the replicability of the results. Furthermore, performance ratings for sample 2 were not only based on self-descriptions backed by supervisors' judgments on task performance, job dedication, interpersonal facilitation, and organizational support. Supervisory ratings for the dimensions of job performance and self-rated character strengths were used to control for inflated correlations due to common method bias (Doty & Glick, 1998). Greatest interest was in the results, which could be found across sample 1 and 2 as well as across self-reports and supervisory ratings of the dimensions of job performance.

One might argue against the usage of self-ratings for the dimensions of job performance. Nevertheless, they help to study the nomological network of the associations between character strengths and job performance as they provide information on the pattern of associations (cf., Luthans, Avolio, Avey, & Norman, 2007). Due to the common method

variance (Doty & Glick, 1998), relationships between self-rated variables describe the upper bound of correlations. Nevertheless, we expected the pattern of correlation between character strengths and job performance to be the same across rating sources of job performance, but numerically smaller coefficients for the supervisory ratings of job performance. Furthermore, agreement of self-reports and supervisory ratings of the dimensions of job performance should be satisfactory to show that self-reports and supervisory ratings are measures of the same performance construct. Variance in the ratings of job performance is usually restricted, for example, because of personnel selection (i.e., those who cannot perform certain behavior are selected out), vocational training, and interventions on the job (LeBreton, Burgess, Kaiser, Atchley, & James, 2003). Interrater correlation is doubted to be “a proper measurement of reliability” (Kasten & Nevo, 2008, p. 180) as correlation-based estimates of rating similarity are attenuated (LeBreton et al., 2003). Therefore, interrater reliability can be low when manifest agreement among raters is high (Kozlowski & Hattrup, 1992). LeBreton et al. (2003) recommended the  $r_{wg}$  proposed by James, Demaree, and Wolf (1984) as a noncorrelational index of rating similarity. The  $r_{wg}$  as index for interrater agreement was used in numerous other studies before (e.g., Biemann, Cole, & Voelpel, 2012; Hendricks & Payne, 2007; Marks, 2009). Accordingly,  $r_{wg}$  was utilized in the present study to examine the agreement of self-reports and supervisory ratings of the dimensions of job performance.

We were interested in the amount of shared variances of character strengths as positive traits and job performance as positive, profitable behavior at work to examine the conceptual overlap between these two groups of constructs. Furthermore, it was examined how each of the character strengths was related to task performance, job dedication, interpersonal facilitation, and organizational support to test the hypotheses and to get a general overview of the relationships on a more exploratory level. Finally, we studied the indirect relationships between character strengths and the dimensions of job performance by



means of the intercorrelations between the number of the individual's signature strengths that are beneficial at work and the dimensions of job performance.

## Methods

### Participants

Sample 1 consisted of 318 German-speaking *employees* (71 men, 247 women) from various occupations like sales personnel, engineers, career counselors, and office workers. Largest groups ( $n \geq 10$ ) were  $n = 22$  teachers, and  $n = 14$  nurses. The mean age of the whole sample was 41.46 years ( $SD = 10.41$ ; ranging from 18-64 years). Participants were highly educated;  $n = 169$  indicated having a Master's degree, and  $n = 19$  a PhD,  $n = 66$  finished an apprenticeship,  $n = 38$  the A-level, and  $n = 25$  the secondary school (one missing). Participants had part time jobs of at least 50% up to full time work ( $M = 90.58$ ,  $SD = 16.32$ ;  $n = 221$  had 100% of employment). Mean job tenure was 8.73 years ( $SD = 8.92$ ).

Sample 2 consisted of 108 German-speaking *employees* (40 men, 68 women) and their 108 *supervisors* (74 men, 34 women) from various occupations like sales personnel, engineers, computer scientist, career counselors, and office workers. Largest groups of employees were  $n = 4$  lawyers,  $n = 4$  teachers,  $n = 4$  police officers, and  $n = 4$  case workers. The employees' mean age of the whole sample was 41.88 years ( $SD = 10.84$ ; ranging from 21-62 years). They were highly educated as  $n = 48$  indicated having a Master's degree and  $n = 8$  a PhD;  $n = 33$  finished an apprenticeship, and  $n = 13$  the A-level (and  $n = 6$  finished secondary school). Employees had part time jobs of at least 50% up to full time work ( $M = 90.33$ ,  $SD = 15.74$ ;  $n = 70$  had 100% of employment). Mean job tenure was 9.34 years ( $SD = 8.53$ ). Their supervisors' (74 males, 34 females) mean age was 45.93 years ( $SD = 8.16$ ; ranging from 25-73 years). The mean for the rating of how well they know the employees (1 = *not at all* to 5 = *partially* to 9 = *very well*) was 6.63 ( $SD = 1.09$ ; ranging from 5-9). That

indicated that the supervisors knew the employees well and were therefore able to judge their behavior at the workplace.

### **Instruments**

The *Values in Action Inventory of Strengths (VIA-IS)* (Peterson, Park, & Seligman, 2005) is a self-rating questionnaire consisting of 240 items in a 5-point Likert-scale format (from 1 = *very much unlike me* to 5 = *very much like me*) measuring the 24 character strengths of the VIA classification (10 items for each strengths). Items are phrased in extremes; a sample items is “I am *always* coming up with new ways to do things” (creativity). The 24 scales of the German version of the VIA-IS (Ruch, Proyer, Harzer, Park, Peterson, & Seligman, 2010) showed high reliability (median  $\alpha = .77$ ) and high stability over 9 months (median test-retest correlation = .73). Independent from the original classification of character strengths analyses of the factor structure<sup>2</sup> of the VIA-IS yielded five factors (e.g., Peterson & Seligman, 2004; Ruch et al., 2010). These were emotional strengths (e.g., bravery and hope), interpersonal strengths (e.g., leadership and kindness), strengths of restraint (e.g., prudence and self-regulation), intellectual strengths (e.g., creativity and love of learning), and theological strengths (e.g., gratitude and religiousness).

The *Usefulness of Character Strengths at Work Scale (UCSWS)* is a list of the 24 character strengths of the VIA classification presented as short content valid paragraphs describing the character strengths-related behavior based on the definitions by Peterson and Seligman (2004; e.g., kindness: Being nice, helpful, kind, and caring without expecting any reward). Respondents were asked to rate the extent to which each of the character strengths is advantageous/facilitating/useful/beneficial vs. disadvantageous/aggregative/inhibitory/

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<sup>2</sup> Peterson and Seligman (2004) highlighted that an individual of good character may display one or two strengths within a group of strengths (e.g., civic strengths; virtue of justice) and that one individual will rarely (if ever) display all strengths of a virtue. Consequently, factor analyses might not be the method of choice to test the original classification of strengths. Nevertheless, the internal structure of the VIA-IS is of interest to see which character strengths co-occur within individuals.

detrimental for the completion of the work tasks (from 1 = *very detrimental* to 5 = *neither detrimental, nor beneficial* to 9 = *very beneficial*).

The *Task Performance Questionnaire (TPQ)* (Williams & Anderson, 1991) is a questionnaire for supervisory ratings on task performance consisting of 7 items (two are reversed scored) in a 7-point Likert-scale format (1 = *strongly disagree* to 7 = *strongly agree*) measuring in-role behavior independent from occupational groups. A sample item is “He/she adequately completes assigned duties”. The reported internal consistency is very satisfying ( $\alpha = .80-.96$ ; Diefendorff, Brown, Kamin, & Lord, 2002; Williams & Anderson, 1991).

The *Job Dedication Questionnaire (JDQ)* (Van Scotter & Motowidlo, 1996) is a questionnaire for supervisory ratings in job dedication consisting of 8 items in a 5-point Likert-scale format (from 1 = *very much unlike him/her* to 5 = *very much like him/her*) describing extra effort, persistence, and discipline. A sample item is “He/she puts in extra hours to get work done on time”. The reported internal consistency is very satisfying ( $\alpha = .94-.95$ ; Van Scotter & Motowidlo, 1996).

The *Interpersonal Facilitation Questionnaire (IFQ)* (Van Scotter & Motowidlo, 1996) is a questionnaire for supervisory ratings on interpersonal facilitation consisting of 7 items in a 5-point Likert-scale format (from 1 = *very much unlike him/her* to 5 = *very much like him/her*) describing helpful, cooperative, and considerate behaviors. A sample item is “He/she praises coworkers when they are successful”. The reported internal consistency is very satisfying ( $\alpha = .89-.93$ ; Van Scotter & Motowidlo, 1996).

The *Organizational Support Questionnaire (OSQ)* is a questionnaire for supervisory ratings on organizational support consisting of 13 items in a 5-point Likert-scale format (from 1 = *very much unlike him/her* through 5 = *very much like him/her*), which describe behavior indicating loyalty and allegiance to the organization one is employed by. A sample item is “He/she endorses, supports, or defends organizational objectives”. Items are derived by the

authors of the present paper from an expert rating study (Coleman & Borman, 2000), in which experts (i.e., psychologists working in or consulting organizations) categorized contextual performance behavior as described in the literature with organizational support as one of the categories (e.g., Brief & Motowidlo, 1986; Borman & Motowidlo, 1993).

## **Procedure**

**German version of the job performance measures.** The present study used German translations of the TPQ, JDQ, IFQ, and OSQ. Three psychologists independently translated the items and the initial versions of the German TPQ, JDQ, IFQ, and OSQ were created by committee approach (Butcher & Pancheri, 1976). A bilingual linguist back-translated these versions and a native speaker compared the two English language versions. A few modifications were made to the initial version, and items were checked for understandability.

**Self-rating versions of the job performance measures.** Usually the questionnaires assessing the dimensions of job performance measure the job performance as judged by the supervisors. For utilization as self-rating questionnaires the items were rephrased to suit self-ratings but were equal regarding content. A sample item is “I endorse, support, or defend organizational objectives” (organizational support). Likert-style answer format analogously ranged from 1 = *very much unlike me* through 5 = *very much like me*.

Reliabilities of the German self-rating versions were investigated in a pilot study with  $N = 168$  currently employed participants (age:  $M = 37.00$ ,  $SD = 18.30$ , ranging from 18-81 years). Internal consistencies were satisfactory with Cronbach alpha coefficients of .75, .80, .76, and .87 for the German TPQ, JDQ, IFQ, and OSQ, respectively.

**Data collection.** Employees of sample 1 and 2 were recruited in several ways to obtain heterogeneous samples. For example, people were informed about the survey by press coverage (e.g., newspaper and several magazines), online information (on a platform giving information about psychological studies), and email (those who had already registered on a

well established website for research purposes and stated interest in participating in future studies). Participants completed the questionnaires and provided information on demographics via the Internet. Respondents were not paid for participating, but were given a feedback of individual results when interested was expressed.

After filling in the questionnaires, the employees of sample 2 asked their supervisors to fill in the supervisory rating. Matching of rater and ratee was done by means of a code that the employees created themselves and communicated their supervisors. Supervisory ratings were given anonymously and both the employees and the supervisors were informed about this beforehand. Hence, employees and supervisors filled in the questionnaires independent from each other. Supervisory ratings were not part of the feedback and both the employees and the supervisors were informed about this in advance.

## **Results**

### **Preliminary analyses**

For an examination of the measurements, means, standard deviations, skewness, and kurtosis were computed for the VIA-IS as well as for the TPQ, JDQ, IFQ, and OSQ in the self- and supervisory ratings, respectively. Furthermore, reliability analyses were conducted (see Table 1 for the results of sample 1 and 2).

Table 1

*Descriptive Statistics and Internal Consistencies of the Measures for Character Strengths (VIA-IS), Task Performance (TPQ), Job Dedication, (JDQ), Interpersonal Facilitation (IFQ), and Organizational Support (OSQ) in Sample 1 and Sample 2*

Scales	Sample 1 (N = 318)					Sample 2 (N = 108)				
	Min	Max	M	SD	$\alpha$	Min	Max	M	SD	$\alpha$
Character strengths – self-ratings										
Creativity	1.40	5.00	3.61	0.65	.87	1.90	5.00	3.56	0.66	.90
Curiosity	2.20	5.00	4.02	0.49	.78	2.50	5.00	4.06	0.48	.78
Judgment	2.40	5.00	3.93	0.46	.78	2.70	5.00	3.96	0.44	.79
Love of learning	2.00	5.00	4.01	0.58	.85	2.30	5.00	3.97	0.53	.81
Perspective	1.60	4.90	3.55	0.49	.77	2.60	4.80	3.61	0.42	.73
Bravery	1.40	5.00	3.60	0.58	.80	2.20	4.70	3.60	0.52	.78
Perseverance	1.70	5.00	3.55	0.64	.86	1.90	4.90	3.55	0.58	.86
Honesty	2.30	5.00	3.80	0.48	.77	2.40	4.70	3.86	0.45	.76
Zest	1.50	5.00	3.54	0.61	.82	2.30	5.00	3.64	0.53	.79
Love	1.20	5.00	3.77	0.61	.80	2.40	4.90	3.84	0.54	.78
Kindness	1.40	5.00	3.77	0.53	.78	2.80	4.80	3.88	0.44	.71
Social Intelligence	1.70	4.90	3.73	0.48	.76	2.50	4.60	3.66	0.50	.78
Teamwork	1.50	4.90	3.57	0.51	.77	2.10	4.70	3.68	0.49	.79
Fairness	1.80	5.00	3.89	0.49	.78	2.70	5.00	3.95	0.43	.74
Leadership	1.50	5.00	3.62	0.55	.81	2.20	4.70	3.66	0.48	.78
Forgiveness	1.30	4.90	3.46	0.55	.80	2.10	4.60	3.52	0.53	.80
Modesty	1.50	4.70	3.18	0.56	.77	1.90	4.80	3.27	0.58	.81
Prudence	1.50	4.60	3.38	0.57	.78	2.30	4.70	3.46	0.52	.75
Self-regulation	1.60	4.70	3.21	0.55	.73	1.70	4.40	3.33	0.54	.72
Beauty	1.60	4.90	3.53	0.58	.75	2.10	4.90	3.46	0.60	.78
Gratitude	1.30	5.00	3.64	0.58	.82	2.50	4.80	3.68	0.53	.81
Hope	1.40	4.90	3.52	0.57	.79	2.50	4.70	3.59	0.57	.83
Humor	1.10	5.00	3.57	0.62	.86	2.10	5.00	3.65	0.55	.87
Religiousness	1.00	5.00	2.89	0.91	.91	1.10	5.00	2.84	0.94	.91

*(Table 1 continues)*

(Table 1 continued)

Scales	Sample 1 (N = 318)					Sample 2 (N = 108)				
	Min	Max	M	SD	$\alpha$	Min	Max	M	SD	$\alpha$
Job performance – self-ratings										
Task performance	3.14	7.00	6.15	0.67	.82	4.00	7.00	6.17	0.66	.84
Contextual performance										
Job dedication	1.50	5.00	3.70	0.69	.81	2.25	5.00	3.75	0.54	.69
Interpersonal facilitation	1.14	5.00	3.97	0.56	.81	2.43	5.00	4.02	0.59	.81
Organizational support	1.15	5.00	3.68	0.68	.92	1.77	4.92	3.78	0.63	.92
Job performance – supervisory ratings										
Task performance	--	--	--	--	--	4.29	7.00	6.39	0.54	.82
Contextual performance										
Job dedication	--	--	--	--	--	2.25	5.00	3.92	0.59	.82
Interpersonal facilitation	--	--	--	--	--	2.00	5.00	3.98	0.58	.84
Organizational support	--	--	--	--	--	2.38	5.00	4.03	0.51	.90

*Note.* -- em dash indicates that scores were not computed as these data were not collected in the sample.

Table 1 shows that the VIA-IS demonstrated satisfactory variability and high reliability with a median of internal consistencies of .79 and .78 in sample 1 and sample 2, respectively. The two samples did not significantly differ in means of the VIA-IS scales. Furthermore, job performance ratings were highly reliable with a median of internal consistencies of .82 in the self-ratings and of .83 in the supervisory ratings. However, the self-rated interpersonal facilitation in sample 2 showed a lower, but still satisfying internal consistency for research purposes of .69. Item analyses indicated that this was due to the item “put in extra hours to get work done in time”. That was consistent with the feedback especially employees in sample 2 gave, that they were often prevented from putting in extra hours. To obtain comparability between the samples and because of for research purposes still satisfying internal consistency, the item remained part of the scale. Employees of sample

1 and 2 did not significantly differ in the means of the performance self-ratings. Variance in performance ratings decreased from self-rating in sample 1 to sample 2 with the supervisory ratings showing the smallest standard deviations. As expected, minima and maxima in the scales measuring the dimensions of job performance indicated range restriction. Especially, the scores in task performance ranged from 3.14 to 7.00, from 4.00 to 7.00, and from 4.29 to 7.00 in the self-reports of sample 1 and 2 as well as in the supervisory ratings, respectively. These findings indicated a ceiling effect in all dimensions of job performance but especially in task performance. That might have had an impact on the effect sizes of correlation-based relationships to other variables (i.e., it might lower them). Nevertheless, skewness (with a tendency of being slightly negative) and kurtosis indicated normal distribution. Means in supervisory ratings were significantly higher than in self-ratings in sample 2 for all performance scores except interpersonal facilitation.

For an examination of the extent of employee-supervisor agreement, the  $r_{wg}$  (James et al., 1984) was computed for each of the dimensions of job performance for each pair of employee and supervisor. James et al.'s (1984) multi-item  $r_{wg}$  ( $r_{wg(J)}$ ) contrasts the average observed item variance between judges (here employee and supervisor) with that which might be expected from random response pattern. The medians of  $r_{wg(J)}$  across the employee-supervisor pairs were .99, .97, .97, and .99 for task performance, job dedication, interpersonal facilitation, and organizational support, respectively, indicating a very strong agreement (cf., LeBreton & Senter, 2008).<sup>3</sup>

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<sup>3</sup> Also the moderately skewed null distribution (with bias referring to effects of vocational training and personnel selection which lead to an upward bias) was utilized (see LeBreton et al., 2003). This leads to the lower bound estimates of agreement, whereas the uniform null distribution (without bias; answering options have the same probability to be selected due to random response pattern) leads the upper bound estimates of agreement (Kotzlowski & Hattrup, 2002). Medians of lower bound interrater agreement were .97, .89, .90, and .96 for task performance, job dedication, interpersonal facilitation, and organizational support, respectively, indicating a strong to very strong agreement (cf., LeBreton & Senter, 2008).



Furthermore, the usefulness ratings of the 24 character strengths in the UCSWS were examined to find out their average level of usefulness at work to answer the question whether strengths exist that were judged as being detrimental at work on average. Additionally, means of the usefulness ratings in sample 1 and sample 2 were compared with each other to investigate whether the overall usefulness ratings in the UCSWS differ in the present samples or whether they were replicable. This was done by computing a 2 (sample 1 vs. sample 2) x 24 (the character strengths) ANOVA, with study as factor and the 24 character strengths as repeated measures variables. Scores in sample 1 and sample 2 did not significantly differ from each other,  $F(23, 402) = 0.96, p = .523$ . This allowed for the presentation of the combined scores from sample 1 and 2 in Figure 1, describing the average level of usefulness of the character strengths.

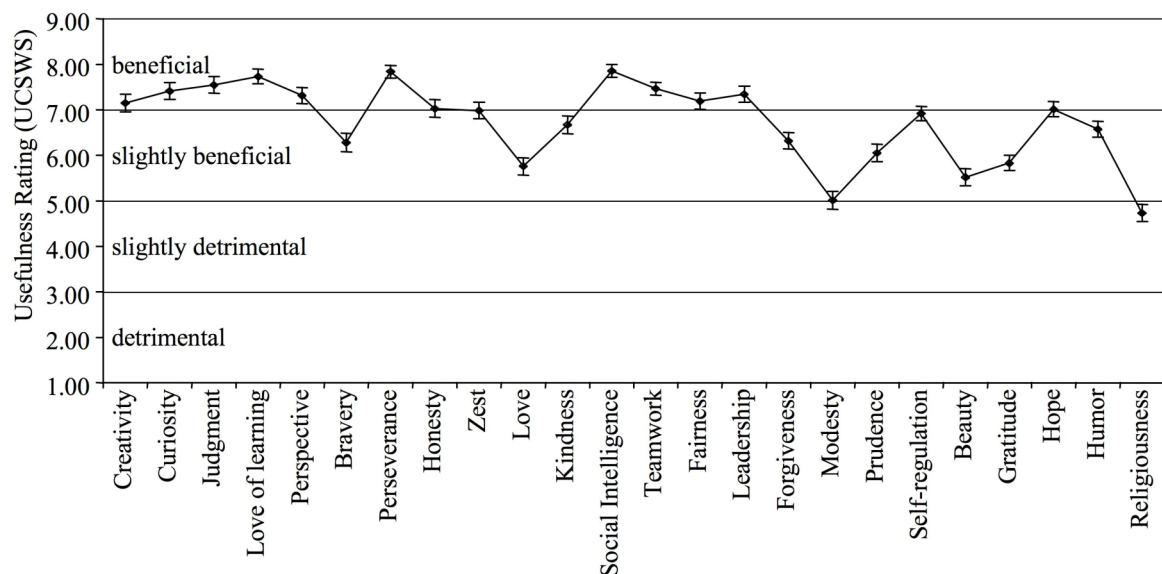


Figure 1. Means in usefulness ratings of character strengths ( $\pm$  95% CI; combined scores from sample 1 and 2,  $N = 426$ ).

Figure 1 shows that behavior related to the 24 character strengths (except modesty and religiousness) were rated at least as slightly beneficial. The cognitive strengths (creativity, curiosity, judgment, love of learning, perspective) as well as the character strengths

perseverance and social intelligence demonstrated the numerically highest ratings. Nevertheless, on an individual level the full range of the answer format (1 = *very detrimental* to 9 = *very beneficial*) was used indicating variability of the ratings and that for some individuals at their specific workplaces character strengths-related behavior was experienced as being very detrimental as well. Frequency analyses showed that up to 53 out of 426 participants rated particular character strengths a considerable or very detrimental indicating that character strengths did differ in their usefulness across various jobs.

### **The Relationships Between Character Strengths and Job Performance**

Analyses were conducted stepwise from a more general level (multiple correlation with composite scores of character strengths factors and a total score for contextual performance) to a specific level (zero-order correlation between 24 character strengths and four dimensions of job performance). The 24 VIA-IS scales were reduced to the five strengths factors (i.e., emotional strengths, interpersonal strengths, strengths of restraint, intellectual strengths, and theological strengths) as reported in Ruch et al. (2010). A principal component analysis with Varimax rotation was computed utilizing the complete data set with the data from sample 1 and 2 ( $N = 426$ ) to obtain a more robust solution. This analysis resulted in five factors (not shown here in detail) that were highly similar to the solution reported by Ruch et al. (2010); Tucker's phi coefficients for the corresponding factors ranged from .91 to .99. Furthermore, a total score for contextual performance was computed by averaging the scores in job dedication, interpersonal facilitation, and organizational support.

For an in depth examination of the relationships between character strengths and job performance, several additional analyses were conducted. *Firstly*, regression analyses with each of the dimensions of job performance (i.e., task performance, job dedication, interpersonal facilitation, and organizational support) as dependent variable were computed to obtain multiple correlations. In the first run the five character strengths factors were

entered as independent variables and in the second run the 24 character strengths scales (method: enter). This was done to examine the overlapping variance between the sets of character strengths (5 strengths factors or 24 scales) and each dimension of job performance. *Secondly*, we investigated the zero-order correlations for each of the character strengths with each of the dimensions of job performance. The multiple and zero-order correlations between the five character strengths factors and the four job performance variables as well as between the 24 character strengths scales and the four job performance variables for sample 1 and sample 2 are given in Table 2.

Table 2

*Zero-Order and Multiple Correlations Between Character Strengths and Job Performance Variables in Sample 1 and Sample 2*

Character strengths	Sample 1 ( $N = 318$ )				Sample 2 ( $N = 108$ )				Sample 2 ( $N = 108$ )			
	Self-ratings of performance				Self-ratings of performance				Supervisory ratings of performance			
	TP	JD	IF	OS	TP	JD	IF	OS	TP	JD	IF	OS
Emotional strengths	.32***	.42***	.36***	.32***	.24*	.32***	.26**	.37***	.13	.21*	.08	.27**
Zest	.28***	.35***	.37***	.35***	.31**	.49***	.36***	.40***	.12	.18	.09	.28**
Bravery	.32***	.46***	.42***	.34***	.18	.37***	.32***	.34***	.14	.27**	.17	.29**
Hope	.34***	.30***	.36***	.36***	.16	.26**	.32***	.38***	.02	.14	.09	.21*
Perseverance	.40***	.51***	.30***	.37***	.50***	.55***	.22*	.45***	.33***	.30**	.09	.36***
Perspective	.32***	.38***	.38***	.30***	.20*	.13	.15	.28**	.07	.17	.07	.28**
Love	.30***	.26***	.43***	.26***	.21*	.12	.40***	.44***	.00	.03	.01	.26**
Social Intelligence	.23***	.39***	.57***	.36***	.31**	.25*	.46***	.29**	.18	.16	.15	.21*
Humor	.13*	.24***	.36***	.17**	.18	.15	.31**	.22*	.00	.02	-.01	.05
Interpersonal strengths	.16**	.19***	.50***	.31***	.23*	.18	.39**	.15	.08	.07	.16	.14
Fairness	.25***	.25***	.46***	.34***	.32***	.29**	.47***	.26**	.07	.08	.22*	.19*
Teamwork	.29***	.38***	.52***	.44***	.37***	.37***	.39***	.36***	.24*	.26**	.26**	.33***
Forgiveness	.18**	.20***	.42***	.29***	.03	.15	.31**	.20*	-.13	.03	.06	.14
Kindness	.36***	.36***	.51***	.34***	.27**	.23*	.36***	.37***	.15	.27**	.25**	.34***
Leadership	.30***	.39***	.53***	.45***	.32***	.38***	.57***	.34***	.11	.17	.23*	.26**
Modesty	.08	.03	.09	.13*	.26**	.22*	.11	.08	.20*	.10	.01	.14

(Table 2 continues)

(Table 2 continued)

Character strengths	Sample 1 ( $N = 318$ )				Sample 2 ( $N = 108$ )				Sample 2 ( $N = 108$ )			
	Self-ratings of performance				Self-ratings of performance				Supervisory ratings of performance			
	TP	JD	IF	OS	TP	JD	IF	OS	TP	JD	IF	OS
Strengths of restraint	.28***	.20***	.06	.22***	.37***	.36***	.02	.24*	.28**	.24*	.07	.29**
Prudence	.23***	.12*	.19***	.23***	.38***	.31**	.16	.29**	.23*	.24*	.13	.30**
Self-regulation	.33***	.35***	.26***	.36***	.35***	.40***	.29**	.35***	.19*	.20*	.12	.32***
Honesty	.35***	.37***	.38***	.36***	.45***	.53***	.25**	.34***	.28***	.26**	.06	.29**
Intellectual strengths	.17**	.28***	.21***	.11	.10	.22*	.25**	.19*	-.04	.16	.13	.21*
Creativity	.17**	.38***	.24***	.18**	.06	.22*	.27**	.25**	-.05	.13	.05	.28**
Love of Learning	.23***	.28***	.24***	.17**	.25**	.29**	.24*	.31***	.09	.23*	.19	.23*
Judgment	.34***	.38***	.32***	.26***	.21*	.28**	.11	.21*	.07	.17	.09	.29**
Curiosity	.29***	.31***	.35***	.29***	.34***	.51***	.54***	.39***	.06	.24*	.10	.28**
Theological strengths	.06	.01	.15**	.09	.02	.03	.22*	.28**	-.05	-.03	-.02	.03
Gratitude	.29***	.24***	.43***	.27***	.19*	.13	.33***	.43***	.06	.11	.06	.18
Religiousness	.05	.11	.25***	.19***	-.01	.03	.20*	.24*	-.03	-.02	.07	.05
Beauty	.14*	.19***	.34***	.12*	.13	.08	.31**	.35***	.02	.04	.04	.12
<i>R</i> factors	.49***	.57***	.65***	.51***	.48***	.54***	.59***	.56***	.31	.35*	.23	.45***
<i>R</i> scales	.54***	.66***	.69***	.58***	--	--	--	--	--	--	--	--

*Note.* TP = Task performance; CP = Contextual performance; JD = Job dedication; IF = Interpersonal facilitation; OS = Organizational support. Love = Capacity to love and be loved, Beauty = Appreciation of beauty and excellence. R = Multiple correlation. -- em dash indicates that scores were not computed due to small sample size for the number of independent variables (cf., Tabachnick & Fidell, 2007). Character strengths were organized with respect to their highest loading on the five strengths factors (in descending order of the loading within a strengths factor). \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table 2 shows that there were various associations between character strengths and task performance, job dedication, interpersonal facilitation, as well as organizational support. Multiple correlations indicated that they shared between 5% and 48% of variance. The zero-order correlation coefficients for the character strengths scales ranged between  $-.13$  ( $p > .05$ ;  $N = 108$ ) and  $.57$  ( $p < .001$ ;  $N = 318$ ) with a median of absolute coefficients of  $.26$ . When correcting the correlations for variance restriction in job performance ratings, the correlations were between  $-.28$  and  $.78$  with a median of absolute coefficients of  $.42$ . For the character strengths factors, the correlation coefficients ranged between  $-.05$  ( $p > .05$ ;  $N = 108$ ) and  $.50$  ( $p < .001$ ;  $N = 318$ ) with a median of absolute coefficients of  $.19$ . When correcting the correlations for variance restriction in job performance ratings, the correlations were between  $-.11$  and  $.72$  with a median of absolute coefficients of  $.31$ . Self-ratings in the character strengths and in the dimensions of job performance were more strongly related to each other due to common-method variance than self-ratings in the character strengths and supervisory ratings of job performance. To check for the similarity of the correlation pattern between the 24 character strengths and each of the job performance dimensions, the rank order of correlation coefficients was examined. Spearman correlations were computed between each pair of the 24 correlation coefficients (i.e., for each dimension of job performance: self-rated performance sample 1 and sample 2; self-rated performance sample 1 and supervisor-rated performance sample 2; self-rated performance and supervisor-rated sample 2). Spearman correlation coefficients indicated that correlation pattern were very similar (i.e., coefficients were  $.47$ ,  $.44$ , and  $.83$  for task performance,  $.53$ ,  $.63$ , and  $.78$  for job dedication,  $.76$ ,  $.37$ , and  $.39$  for interpersonal facilitation as well as  $.45$ ,  $.54$ , and  $.41$  for organizational support (all  $p < .05$  one-tailed).

The relationships by means of zero-order correlations between character strengths and the dimensions of job performance, which occurred across all studies and samples, were of

special interest. An examination of those indicated that the expectations were widely met<sup>4</sup>.

*Task performance* was related to perseverance, teamwork, and the strengths of restraint (i.e., honesty, prudence, self-regulation; ordered according numerically decreasing correlation coefficient to supervisor-rated task performance). *Job dedication* was associated with the strengths of restraint (i.e., honesty, prudence, self-regulation; ordered with numerically decreasing correlation coefficient to supervisor-rated job dedication). Furthermore, job dedication went along with emotional strengths and among those strengths particularly with perseverance and bravery. Additionally, it was related to teamwork, curiosity, and love of learning. *Interpersonal facilitation* correlated with teamwork, kindness, leadership, and fairness. *Organizational support* was the dimension of job performance most often related to the character strengths. Across all studies and samples, all except six character strengths (i.e., forgiveness, modesty, appreciation of beauty and excellence, gratitude, humor, and religiousness) were robustly related to organizational support. Furthermore, the factors strengths of restraint and emotional strengths were associated with organizational support.

### **The Relationships Between the Number of the Individual's Signature Strengths That are Beneficial at Work and Job Performance**

To examine whether performance scores would increase with the degree of congruence between the job tasks and the individual signature strengths, several analyses were conducted. *Firstly*, the degree of congruence between the job tasks and the individual

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<sup>4</sup> Also partial correlations between the character strengths and the dimensions of job performance were computed controlling for the corresponding ratings in the UCSWS. This was done as the ratings in the corresponding strengths in the VIA-IS and the UCSWS were slightly related to each other (i.e., median was .16 and .28 in sample 1 and sample 2, respectively). Results remained the same as correlation coefficients hardly changed (median change of absolute coefficients was .02, .03, and .02 in sample 1 and in sample 2 for self- and supervisor-rated performance, respectively). Interestingly, UCSWS ratings did not consistently relate to the dimensions of job performance when the VIA-IS scores were controlled for (except: social intelligence and task performance; perspective and hope with organizational support). This also highlighted the role of character strengths as positive traits for job performance.

signature strengths represented by the number of signature strengths useful at work was defined for each of the participants. Because we were interested in the signature strengths, only the seven numerically highest character strengths as measured by the VIA-IS within each individual were included in the analyses. Among those seven, a character strength was only counted as being congruent, if (a) the score in the VIA-IS was at least 3.5 on a rating scale for the endorsement of strengths-related statements with 3 = neutral, 4 = agree, and 5 = totally agree to make sure that only those strengths were considered that were endorsed at least to a slight extent. It was assumed that people could not successfully show character strengths-relevant behavior at work if they did not possess the character strengths to at least some extent. (b) The score in the UCSWS needed to be 7 or higher on a rating scale where 5 = neither detrimental, nor beneficial, 6 = slightly beneficial, 7 = beneficial, 8 = very beneficial, 9 = absolutely beneficial. With the cut-off of 7 it was made sure that the strength-related behavior is clearly judged as helpful. This resulted in a score ranging from a number of 0 to 7 beneficial signature strengths representing a very low to very high congruence between the job tasks and the individual signature strengths.

*Secondly*, correlations between the number of signature strengths useful at work and the four dimension of job performance were computed. Table 3 presents the correlation coefficients obtained in the studies 1 and 2 as well as in self- and supervisor-rated task performance, job dedication, interpersonal facilitation, and organizational support.



Table 3

*Relationships Between the Character Strengths-Related Person-Job Fit<sup>1</sup> and the Job Performance Variables*

Job performance variables	Sample 1 Self-ratings	Sample 2 Self-ratings	Sample 2 Supervisor-ratings
Task performance	.34***	.28**	.12
Job dedication	.33***	.30***	.19*
Interpersonal facilitation	.29***	.30***	.22*
Organizational support	.25***	.46***	.35***

*Note.*  $N_{\text{Sample1}} = 318$ .  $N_{\text{Sample2}} = 108$ .

<sup>1</sup> Operationalized as the number of signature strengths beneficial at work (range: 0 to 7).

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table 3 shows that – as expected – the number of signature strengths useful at work was related to all dimensions of job performance in the self-ratings. The supervisory ratings of job dedication, interpersonal facilitation, and organizational support were significantly associated with the number of signature strengths useful at work but not with task performance. The latter might be due to the ceiling effects in the supervisory ratings of task performance.

## Discussion

The present paper is the first one investigating the relationships between the 24 character strengths from the VIA classification (Peterson & Seligman, 2004) and job performance. Four dimensions of job performance were examined, namely task performance and three dimensions of contextual performance job dedication, interpersonal facilitation, and organizational support. Agreement of self-reports and supervisory ratings of the dimensions of job performance was very high indicating that self-reports and supervisory ratings are measures of the same performance constructs. As expected character, indeed, proved to be positively related to job performance. Therefore, the initial question, whether being good

(i.e., character strengths) is related to positive behavior at work (i.e., job performance) can be answered with “yes, to a considerable degree”, as the 24 character strengths and the four dimensions of job performance showed various meaningful associations. Findings were replicable across two samples utilizing self- and supervisor-rated performance.

Taken together, character strengths as personality variables had a stronger overlap with contextual performance dimensions than with task performance in terms of the number of significant correlations. Nevertheless, the character strengths showed consistent associations to task performance as well. This is in line with Motowidlo et al.’s (1997) theory of individual differences in task and contextual performance. Among the dimensions of contextual performance, organizational support was the one most often co-occurring with the character strengths across all studies and samples.

Amongst those strengths consistently associated with *task performance* were perseverance, teamwork, honesty, prudence, and self-regulation. The relations to perseverance, honesty, and self-regulation had been anticipated since finishing what one starts, acting in a sincere way and taking responsibility for one’s actions as well as being disciplined (Peterson & Seligman, 2004) assumably relate to proper work outcomes. Furthermore, prudence referring to not taking undue risks and not saying or doing things that might later be regretted played an important role for task performance in the same way as teamwork indicates doing one’s share (Peterson & Seligman, 2004).

Employees from different occupations were investigated here. Perseverance, teamwork, honesty, prudence, and self-regulation seem to be the strengths related to task performance across different occupations. Even more strengths (those that emerged in the mixed samples reported in the present research and those specific for a job) might be related to task performance when specific job groups are studied, as task performance is the proficiency in job-specific tasks (Van Scotter & Motowidlo, 1996). For example, the

interpersonal character strengths (love, kindness, social intelligence) were especially related to satisfaction with work in jobs that explicitly involve other people like teaching or sales (Peterson & Park, 2006). The same could result for task performance as well. Research can be conducted to find out the most important character strengths for high job performance in specific jobs or kinds of organizations like profit vs. non-profit.

In line with the expectations, *job dedication* was associated with perseverance, bravery, self-regulation, curiosity, and love of learning. Results indicated that it related to additional strengths, namely honesty, prudence, and teamwork. There was some overlap with the character strengths related to task performance as job dedication has more conceptual overlap with task performance than the other dimensions of contextual performance (Van Scotter & Motowidlo, 1996). However, bravery, curiosity, and love of learning were unique. These character strengths refer by definition to behaviors like not shrinking back from challenge or difficulty, taking interest in all of ongoing experience for its own sake, and mastering new skills. Hence, these character strengths may facilitate “extra effort to complete work tasks successfully despite difficult conditions and setbacks”, the development of own knowledge and skills, and “taking the initiative to accomplish team [...] objectives” as parts of job dedication (Borman et al., 2001, p. 55).

*Interpersonal facilitation* was related to the civic and interpersonal character strengths as expected as teamwork, leadership, and fairness as well as kindness went along with it. All these strengths may foster pausing own tasks for helping and assisting co-workers, if necessary. Helping, cooperating, and courtesy are inherent aspects of interpersonal facilitation (Borman et al., 2001), which may be assisted by positive traits such as teamwork (e.g., being loyal to the group), fairness (e.g., giving everyone a fair chance), and kindness (e.g., doing favors and good deeds for others, helping them, and taking care of them). Leadership entails encouraging to get things done and at the time also maintaining good

relations within the group. All that encourages the motivation of others in the team, which is an important aspect of interpersonal facilitation as well (Borman et al., 2001).

*Organizational support* was related to all of the character strengths except six (i.e., forgiveness, modesty, appreciation of beauty and excellence, gratitude, humor, and religiousness) across all studies and samples. The numerically highest associations were with perseverance, kindness, teamwork, and self-regulation. This dimension of job performance entails less performance related issues like enhancing own or others' accomplishments. It is much more related to moral behavior like a positive representation of the organization one is employed at and includes promoting it, showing loyalty by staying with it despite hardship, and complying with organizational rules (Borman et al., 2001).

The question arises, whether character strengths would be still correlated with job performance when general mental abilities are controlled for. Schmidt and Hunter (1998), for example, highlighted the impact of intelligence on job performance as (one of) the most important predictors. Character strengths only slightly correlate with intelligence (Buschor, Proyer, & Ruch, 2011) and they, therefore, are expected to correlate with job performance when general mental abilities are controlled for. However, this needs to be further studied.

The ceiling effect (especially in supervisory-rated task performance) in the ratings of job performance might have lowered the associations between character strengths and the dimensions of job performance. Furthermore, in sample 2 the ceiling effect seemed to be intensified by the self-selection; only employees working well asked their supervisors to judge their job performance. Hence, it will be of interest to study whole departments or teams from different occupations, where all employees are invited to participate and do not need to ask their supervisors for their ratings as this would be part of the research program implemented there. Furthermore, one might study beginners who do not have much training

in their jobs or tenure. Those who will or need to leave a job might be the less well performing employees. Both may enable a broader range of job performance scores.

As 24 character strengths were related to 4 dimensions of job performance many correlation coefficients were computed, a Bonferroni correction might have been indicated to control for the number of significance tests. However, the results reported here were replicated across different samples and sources of information and findings would not be that consistent by coincidence. Furthermore, we did not correct all correlation coefficients for the range restrictions observed in the ratings of the dimensions of job performance. Thus, the reported correlation coefficients might serve as lower bound estimates of the relationships between character strengths and job performance.

In addition to the previously discussed direct relations between the character strengths and job performance, the present research shows that there is an indirect association as well, through the number of signature strengths beneficial at work (i.e., the congruence between the job and a person). The participants who rated their signature strengths as beneficial at work seemed to be the better performer. Results were mixed for task performance, as they could not be replicated across all rating sources. This might be due to the ceiling effect especially in the supervisory ratings lowering variability and the single item measurement of the usefulness of strengths at work potentially limiting reliability. Nevertheless, the results are very promising. Future research should utilize more reliable instruments for the assessment of the usefulness of character strengths at work. Additionally, it might be of interest to test, whether performance steadily increases with the number of signature strengths that are beneficial at work or whether there is a “satiation point” of the number of beneficial signature strengths. This “satiation point” may be expected to be located between three and seven strengths as this is the hypothesized number of signature strengths within individuals stipulated by Peterson and Seligman (2004). That means that with the number of three rather

than two beneficial signature strengths the level of job performance may increase but the increment of predictive validity of any further signature strength may be consecutively lower in amount and actually be stagnant past the hypothesized number of signature strengths. Results would give interesting insights for strengths-related personnel development in order to increase job performance by fostering the signature strengths.

The character strengths-related congruence between the job and a person might be interpreted as a new approach for the person-job fit. In terms of Kristof's (1996) descriptions of the fit measurement, in the present research, the fit was operationalized indirectly on an individual level. The operationalization of the degree of person-job fit (i.e., the number of signature strengths that are beneficial at work) was based on the employee's self-description and the same employee's description of the job regarding the character strengths. Considering the notion of signature strengths (Peterson & Seligman, 2004) a fit score can be computed that reflects the number of beneficial signature strengths instead of a difference score between the characteristics of an individual and his/her workplace. With the VIA-IS a reliable and valid measure for the character strengths of an individual exists (Peterson et al., 2005; Ruch et al., 2010). Further research needs to develop a measure assessing the job demands with multiple items whose reliability in terms of internal consistency but also by means of interrater agreement is investigated. Additionally, incremental validity might be studied with respect to common operationalizations of person-job fit (e.g., values, abilities; cf., Kristof, 1996) when predicting job performance or other work related outcomes like job satisfaction. Nevertheless, the present studies provide first evidence that the strength-related congruence between a person and his/her job might play a role for job performance.

As cross-sectional data were reported in the present study, causality could not be inferred and experimental or longitudinal studies are needed to address this issue. Character strengths can be modified because they are defined as malleable (Peterson & Seligman,

2004). Consequently, interventions aimed at fostering job performance can be either designed to train character strengths like perseverance or to increase strengths-related person-job fit due to changes in the workplace design. Future research may address the utility of these two approaches to investigate the circumstances under which they are most appropriate.

Furthermore, the role of strengths-related person-job fit for job satisfaction, and flow can be examined, as those concepts profit from person-environment fit as well (e.g.,

Csikszentmihalyi, 1990; Verquer, Beehr, & Wagner, 2003).

To sum up, the present paper shows that character and job performance are related to each other directly and indirectly (i.e., through the congruence between the individual signature strengths and the character strengths beneficial at the individual workplace).

Different character strengths were related to different dimensions of job performance. Hence, character strengths seem to be promising personality traits regarding the prediction of job performance. This opens a new field for research in, for example, organizational behavior, personnel selection, and personnel development. Research can be conducted with respect to the role of character strengths at work across employees, but also considering the strengths-related person-job fit within employees. Future research may not only address performance, but also other outcomes like job satisfaction and calling. Furthermore, the study of character strengths may not only be conducted on individual level but also on group level as character strengths profiles differ across different occupations (e.g., Matthews, Eid, Kelly, Bailey, & Peterson, 2006; Peterson et al., 2010). These profiles can, for example, be related to team efficiency or climate and may provide information for interventions on team level.

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**Part II**

**The Application of Signature Character Strengths and Positive Experiences at Work**

Claudia Harzer and Willibald Ruch

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Abstract

We hypothesized that the amount of positive experiences at work (job satisfaction, pleasure, engagement, meaning) is a function of the extent to which the situational circumstances at the workplace allow for the application of an individual's signature character strengths. For the description of the individual a reliable and valid instrument already exists, but not for the environment. Hence, the newly developed Applicability of Character Strengths Rating Scales (ACS-RS) with information on its reliability and validity were also presented. A sample of 1,111 adults filled in the ACS-RS and measures for possession of character strengths and positive experiences at work. The ACS-RS was reliable by means of internal consistency and inter-rater reliability. It proved to be valid in several ways being sensitive to: (a) the differences in the applicability of trait-relevant behavior in formal vs. informal situations by showing higher applicability of the character strengths in the latter; (b) the differences between traits regarding their applicability across situations; (c) people's disposition to choose situations fitting their dispositions by showing positive relationships between the degree of possession and applicability. Moreover, correlations between applicability of strengths and positive experiences increased with the individual centrality of the strengths. The more signature strengths were applied at the workplace, the higher the positive experiences at work. This study showed that character strengths matter in vocational environments irrespective of their content. Strengths-congruent activities at the workplace are important for positive experiences at work like job satisfaction and experiencing pleasure, engagement, and meaning fostered by one's job.

*Keywords:* character strengths; signature strengths; job satisfaction; positive experiences

## Introduction

Psychology has long focused on pathology and the development of treatments for various disorders. In contrast, the main focus of *positive psychology* is on what makes our lives most worth living (Seligman & Csikszentmihalyi, 2000). Three topics are at the center of positive psychology: (a) positive subjective experiences (e.g., happiness or satisfaction); (b) positive individual traits (e.g., character strengths or talents); and (c) positive institutions (e.g., families or workplaces) (Peterson, 2006; Seligman & Csikszentmihalyi, 2000). Positive institutions should enable the display of positive traits, like character strengths, which in turn foster positive experiences (Peterson, 2006). The work environment is seen as one of the natural environments for positive psychology (Park & Peterson, 2007). Therefore, the paper addresses the relationships between the application of character strengths at work and positive experiences at work.

## Character Strengths

Peterson and Seligman (2004) introduced the Values in Action (VIA) classification of strengths to describe the good character as an important instance of optimal human functioning. Character strengths represent the components of the good character as measurable positive individual differences that exist as continua and not as categories (McGrath, Rashid, Park, & Peterson, 2010). The VIA classification describes 24 character strengths. Cognitive strengths like creativity, curiosity, judgment, love of learning, and perspective entail the acquisition and use of knowledge. Emotional strengths like bravery, perseverance, honesty, and zest involve the exercise of will to accomplish goals in the face of external or internal opposition. Interpersonal strengths like capacity to love and be loved (short: love), kindness, and social intelligence involve “tending and befriending” others. Civic strengths like teamwork, fairness, and leadership underlie healthy community life. Strengths protecting against excess are forgiveness, modesty, prudence, and self-regulation.



Strengths of transcendence are appreciation of beauty and excellence (short: beauty), gratitude, hope, humor, and religiousness.

The character strengths can be ranked for each individual with respect to how central they are to the individual. Peterson and Seligman (2004, p. 18) stipulate that most people have between three and seven core or “signature” strengths. Signature strengths are the ones “[...] that a person owns, celebrates, and frequently exercises”. Several studies highlighted that the application of individual signature strengths is related to overall positive experiences like life satisfaction, well-being, and meaning in life (e.g., Littman-Ovadia & Steger, 2010; Proctor, Maltby, & Linley, 2011; Seligman, Steen, Park, & Peterson, 2005; Wood, Linley, Maltby, Kashdan, & Hurling, 2011). Such findings suggest that positive experiences in the work environment would be fostered when the individual signature strengths are applied at work.

### **Application of Signature Strengths and Positive Experiences at Work**

Positive experiences are manifold. The focus of the present paper was on satisfaction and happiness at work. *Satisfaction* with life is defined as a global, cognitive assessment of the quality of life (Diener, Emmons, Larsen, & Griffin, 1985). More specifically, job satisfaction, or the domain satisfaction relating to work (Diener, Suh, Lucas, & Smith, 1999), was of interest in this study. According to Peterson, Park, and Seligman (2005b), pleasure (hedonism), engagement (flow), and meaning (eudaimonia) comprise three separate, yet related routes of life to obtain happiness. Furthermore, the use of the individual strengths is thought to facilitate engagement and meaning. Engagement can be reached by using one’s strengths (Seligman, 2002) and leads to more flow – the state of mind when being absorbed by an engaging activity that matches an individual’s abilities (Csikszentmihalyi, 1990). Identifying one’s character strengths, cultivating them and living in accordance with them to

achieve a higher purpose leads to meaning. Accordingly, work allows for engagement and meaning when individual character strengths can be used to perform the work tasks.

In line with this theory, the deployment of character strengths at work relates to job satisfaction and meaning at work (Littman-Ovadia & Steger, 2010). This relationship has not been studied so far with respect to pleasure and engagement. However, Park and Peterson (2007) reported that people most appreciated a job congruent with their signature strengths. Consequently, there are hints that the application of individual signature strengths might indeed be related to positive experiences at work (i.e., job satisfaction as well as pleasure, engagement, and meaning at work).

However, the *application* of a character strength depends on two conditions. *Firstly* (like for every trait; cf., Fishbein & Ajzen, 2010; Saucier, Bel-Bahar, & Fernandez, 2007), an individual needs to *possess the strength* to a certain degree to be able to show strength-related behavior (i.e., apply it)<sup>1</sup>. The Values in Action Inventory of Strengths (VIA-IS; Peterson, Park, & Seligman, 2005a) is the standard measure for the possession of character strengths in adults. A variety of studies demonstrate its reliability and validity (e.g., Huta & Hawley, 2010; Peterson et al., 2005a; Shimai, Otake, Park, Peterson, & Seligman, 2006).

*Secondly*, situational circumstances (e.g., at the workplace or in private life) need to allow or call for the demonstration of a strength, as trait-related behavior needs conducive circumstances to be displayed (Saucier et al., 2007; Ten Berge & De Raad, 1999). Formal situations like the workplace might not always encourage behavior that suits an individual's trait pattern (Ten Berge & De Raad, 1999). For example, norms given by the job description, supervisors or co-workers restrict the range of suitable behaviors. Therefore, the *applicability* of a given character strength may be defined as the degree to which situational circumstances

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<sup>1</sup> As it is the case for personality assessment in general, character strengths as personality traits are theoretical constructs and it is not possible to possess or apply them technically speaking. Nevertheless, one can endorse statements relating to the character strengths.

allow an individual to display strengths-relevant behavior. Until now, there was no sophisticated instrument measuring the situational circumstances regarding character strengths-related behavior in a certain environment independent from the degree of the individual possession of a strength. Therefore, the present study was in a first step aimed at examining a new measure of the degree of applicability of character strengths prior to further studying the role of the application of character strengths in positive experiences at work.

### **Measuring the Applicability of Character Strengths**

The situational circumstances (e.g., at the workplace or in private life) can be both external, relating to environmental aspects mainly independent of the individual, and internal, relating more to the individual's perception of the environment (cf., Saucier et al., 2007). The Applicability of Character Strengths Rating Scales (ACS-RS) measures two external and two internal influences perceived by the individual for each of the 24 character strengths. The two *external* influences are (a) the normative demands of a situation and (b) the appropriateness of certain behavior within a given situation. The two *internal* influences are (c) the perceived presence of factors that may facilitate or impede a behavior like time pressure and (d) the intrinsic motivation to show a certain behavior. Three out of the four influences (a to c) were based on suggestions of Fishbein and Ajzen (2010) regarding the influences on actual human social behavior. As highlighted by Fishbein and Ajzen (2010) in their reasoned action model, (a) *normative beliefs* refer to the perceived behavioral expectations of important referent individuals or groups, such as the supervisor and coworkers, as well as the formal job description. Items should therefore assess the strength of norms regarding the behavior of interest (i.e., "it is demanded" in the job description and/or within the team). Furthermore, Fishbein and Ajzen emphasize the role of (b) *behavioral beliefs* that the behavior of interest leads to expected outcomes. Items should therefore assess the degree of appropriateness of the behavior of interest (i.e., "it is helpful" for managing the job tasks). Finally, Fishbein and

Ajzen highlight (c) *control beliefs* defined as the perceived presence of factors that may facilitate or impede a behavior (e.g., perceived time pressure would impede behavior). Items should therefore assess the degree of control and confidence to perform certain behavior (i.e., “I do it”). We added a fourth aspect namely (d) the motivation to behave in a certain way in a certain environment, because the expression of traits also depends on individual motives (Ten Berge & De Raad, 1999). Items should therefore ask for the individuals’ evaluation of the relative importance of the behavior of interest (i.e., “it is important for me” to behave in line with the behavior of interest). The ACS-RS assesses the applicability of the character strengths as the individually perceived frequency (never to [almost] always) to which those four influences allow for the display of strengths-relevant behavior in a certain environment (here: work and private life).

These four ratings might be highly similar within a specific job. However, examples can be imagined where the ratings do not necessarily highly correspond with each other. For example, a nurse’s job description entails many comments about hygiene, but nothing about kindness. Also, nurses rarely talk much about kindness in their teams. Thus, job demands are rather low regarding kind behavior. However, a nurse might realize that caring for patients is easier when being kind to them and, therefore, kind behavior is helpful. Furthermore, a nurse might regard kind behavior as very important because she likes to treat people the way she would like to be treated by others. However, the workload of nurses is very high, which impedes kind interactions.

It might be more parsimonious to ask for the use of strengths in general (Wood et al., 2011) or utilize single- item measures for the frequency of application of each of the character strengths (Littman-Ovadia & Steger, 2010). However, those approaches do not allow for the discrimination of the various influences on actual behavior (i.e., the degree of

possession as well as the four aspects of applicability) influencing the application of character strengths.

### **The Present Study**

The present study primarily aimed at investigating the role of the application of the individual character strengths at work in reporting positive experiences at work, namely job satisfaction as well as pleasure, engagement, and meaning. We expected the application of the individual signature strengths to be positively correlated with positive experiences at work. The degree of congruence between a person and his/her job might increase with the number of signature strengths that one can apply at work and with the extent to which one can do so. Therefore, three hypotheses on the role of the application of signature strengths for positive experiences at work were derived. (a) The degree of applicability of the strengths and the amount of positive experiences are related to each other. (b) The correlation coefficients increase with the rank of the strengths (irrespective of the nature of the strengths). They are highest for the signature strengths (ranks 1 to 7) and lower for the strengths ranked lowest (ranks 8 to 24) for an individual. (c) There is a “satiation point” for the number of applied signature strengths. This satiation point may be expected to be located between three and seven strengths. We expect, the use of two rather than one signature strength would increase positive experience at work but the increment of predictive validity of any further signature strength would be consecutively lower, reaching a plateau past the hypothesized number of signature strengths.

Prior the examination of the hypotheses, the measure assessing the applicability of character strengths in work life and private life, namely the ACS-RS, was examined to study its usability. Of special interest were the descriptive statistics of the 24 scales (total scores of the four ratings for the applicability of each strength), their internal consistencies as indicators of homogeneity of the four ratings for each of the character strengths, and the

interrater reliability. We expected that different persons rating (their perceptions of) the external influences (i.e., normative demands and appropriateness) within the same environment would agree in their judgments. We expected the 24 scales of the ACS-RS to be separate yet related, and therefore, intercorrelations of the 24 scales were examined. Non-redundancy was assumed if correlation coefficients were below internal consistencies.

Furthermore, this study examined the following four groups of theory-driven hypotheses as indicators for the validity of the ACS-RS. (1) Peterson and Seligman (2004; p. 23) highlighted that some strengths are tonic (i.e., show themselves “steadily in a variety of settings” like humor and kindness) while others are phasic (i.e., “comes and goes because it is relevant only in settings that afford it” like bravery). Generally, we assume that tonic strengths are more often applicable than phasic strengths (i.e., mean differences in the applicability scores). For example, strengths of humanity are relevant in interactive situations that emerge relatively often, while bravery needs a more specific situation of threat, like standing up for someone who is excluded from a group. (2) According to Ten Berge and De Raad (1999), functions and roles of individuals within a given context are important for actual behavior as well. The workplace as a formal situation is more restricted in roles and functions than the private life as an informal situation. Therefore, we expect that applicability of character strengths at work is smaller in magnitude than in private life. (3) We expect differential enabling or disabling situational conditions regarding the character strengths at work compared to private life, as different situations are more appropriate for the display of different traits (cf., Ten Berge & De Raad, 1999). For example, the character strengths of leadership may be more applicable at the workplace. Religiousness (except for job groups like priests and nuns) and love seem to be more private and therefore, may be more applicable in private life. (4) People tend to choose environments fitting their dispositions

(Caspi & Herbener, 1990). Consequently, we expect positive relationships between the degree of possession and the degree of applicability of the 24 character strengths.

## **Method**

### **Participants**

The sample consisted of 1,111 German-speaking employed adult volunteers (479 men, 632 women). Their mean age was 43.53 years ( $SD = 10.02$ ; range 18-65 years). Concerning educational level,  $n = 649$  indicated having a Master degree,  $n = 250$  had an apprenticeship, and  $n = 138$  a PhD. Participants represented a wide array of occupations (e.g., like medical doctors, sales personnel, engineers, mechanists, and office workers). The most prevalent occupational fields ( $n > 50$ ) included  $n = 127$  teachers,  $n = 79$  participants with commercial education,  $n = 67$  nurses, and  $n = 51$  engineers. Three quarter of the participants had 80% up to full time employment ( $M = 84.42$ ,  $SD = 22.41$ ;  $n = 610$  worked full time).

### **Instruments**

The *Applicability of Character Strengths Rating Scales (ACS-RS)* measure the extent to which each of the 24 character strengths of the VIA classification is applicable in a) private and b) work life. For each of the character strengths, short paragraphs are provided describing character strengths-relevant behavior based on the definitions by Peterson and Seligman (2004; e.g., kindness: Being nice, helpful, kind, and caring without expecting any reward). These behaviors are rated on a 5-point Likert-scale (1 = *never though* 5 = [*almost*] *always*) for (a) normative demands of a situation (actual wording in the ACS-RS: “it is demanded”), (b) appropriateness of the behavior (“it is helpful”), (c) perceived presence of factors that may facilitate or impede the behavior (“I do it”), and (d) intrinsic motivation to show it (“it is important for me”). As these ratings are very abstract, an example in the

instructions highlights their specific meaning<sup>2</sup>. The environment of interest (i.e., at work, in private life) is mentioned in the instructions as well and different environments are rated independently from each other. For each environment, a total of 96 items measures the applicability of the 24 character strengths with the 4 ratings for each of the strengths.

The *Values in Action Inventory of Strengths (VIA-IS)*; Peterson et al., 2005a) is a questionnaire consisting of 240 items in a 5-point Likert-scale (from 1 = *very much unlike me* through 5 = *very much like me*) measuring the possession of 24 character strengths. Sample items are “I expect the best” (hope) or “I never quit a task before it is done” (perseverance). The responses are averaged across the 10 items per character strength. The German version of the VIA-IS (Ruch, Proyer, Harzer, Park, Peterson, & Seligman, 2010) showed high reliability (median  $\alpha = .77$ ) and high stability over 9 months (median test-retest correlation = .73). Self- and peer-rating forms correlated in the expected range (median correlation = .40).

The *Job Satisfaction Questionnaire (JSQ)*; Andrews & Withey, 1976) consists of five items in a 7-point Likert-scale (from 1 = *terrible* through 7 = *delighted*) measuring job satisfaction. Sample items are “How do you feel about your job?” or “How do you feel about the people you work with- your co-workers?” The responses are averaged to provide a total job satisfaction score. The JSQ showed high reliability ( $\alpha = .81$ ) and convergent validity ( $r = .70$ ) to other measures of job satisfaction (Rentsch & Steel, 1992). Three psychologists translated the JSQ, and the initial version of the German JSQ was created by committee

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<sup>2</sup> Example given in the instruction is about kindness rated by a nurse: A nurse’s job description entails many comments about hygiene but nothing about kindness and they do not talk much about it in the team. That is why she would rate “it is demanded” as seldom (rating = 2). As she realized that caring for patients is easier when being kind to them she rates that “it is helpful” often (rating = 4). Furthermore, it is usually important for her to interact with patients in a kind way and she therefore would rate “it is important for me” as 4 = often. However, the workload is very high and therefore impedes kind interactions some of the time (“I do it” = 3). In total kindness would have an applicability score of 3.25, which means that kindness is sometimes applicable at work.



approach (Butcher & Pancheri, 1976). A bilingual retranslated this version, a few modifications were made to the initial version, and items were checked for understandability.

The *Work Context Questionnaire* (WCQ; Ruch, Furrer, & Huwyler, 2004) is a three-item self-report questionnaire measuring the extent to which one's job allows for pleasure, to which it fosters one's potentials (engagement) and to which it allows for meaning. Answers are given on a 5-point Likert-scale (1 = *totally disagree* through 5 = *totally agree*). Validity of the ratings was supported, as they were meaningfully associated with other variables. For example, engagement was positively related to the promotion level of employees. Pleasure and meaning were positively related to satisfaction with the job.

## **Procedure**

**Data collection.** The study was advertised through press coverage (e.g., newspaper and several magazines) highlighting the requirement for participation of having a job with a percentage of employment of at least 50%. Participants completed the questionnaires and provided information on demographics via the Internet (67.5% of those who started to fill in the survey also completed it). Respondents were not paid for participating, but were given feedback concerning their individual results when interest was expressed.

**Construction of items in the ACS-RS.** The short paragraphs describing character strengths-relevant behavior were developed in several steps in a committee approach procedure (cf., Butcher & Pancheri, 1976). Four individuals (including the first author) with advanced knowledge in positive psychology read Peterson and Seligman (2004), summarized definitions of the strengths, and reworded them as necessary in a less scientific language independently from each other. Those solutions were compared to each other and integrated into the final form.

**Pretest of the ACS-RS.** Psychometric properties of the ACS-RS were examined in a sample of 152 employed adult volunteers (83 men, 69 women) from various occupations.

Their mean age was 40.39 years ( $SD = 9.48$ ; range 19-70 years). Participants judged the applicability of the character strengths in their work life. Internal consistencies were  $\geq .74$  for all scales (median  $\alpha = .80$ ). Corrected item-total correlations of the ACS-RS were acceptable as they ranged from .36 to .91 with a median of .65. Mean scores out of the four ratings for each of the character strengths were normally distributed. Summing up, findings showed that there was no need to revise the ACS-RS for this research.

**Interrater reliability of the ACS-RS.** The interrater reliability of the ACS-RS was tested by means of intra-class correlations (absolute agreement). If the measures were reliable, different persons rating the strength-related external demands (i.e., mean of the two ratings regarding normative demands and appropriateness) within the same environment (i.e., their workplace) would agree in their judgments. Three different workplaces – a road traffic department, a company for the inspection of construction material, and a department for scientific research in psychology – were studied by using six or seven raters each. ICC(2) coefficients were computed to test the reliability of unit members' average ratings. Interrater reliability was moderate to strong with  $ICC(2, 7) = .73$ ,  $ICC(2, 6) = .57$ , and  $ICC(2, 7) = .77$ , for administrative officials, inspectors of construction material, and teaching and research associates, respectively (cf. LeBreton & Senter, 2008; F-tests associated with ICC values were statistically significant, all  $p < .001$ ). Agreement among inspectors of construction material was lower as they did not have tasks as homogeneous as the administrative officials, and the teaching and research associates. Furthermore, there were differences between the three groups in the applicability of certain character strengths that can be traced back to the contents of each environment. For example, teamwork was more applicable for the administrative officials and the inspectors of construction material than for the teaching and research associates, who usually work alone. The administrative officials shared a landscaped

office and the inspectors of construction material usually worked in groups of two together with the construction crew when inspecting an ongoing building site.

## Results

### Preliminary Analyses

**Descriptives and internal consistencies of the instruments.** For an examination of the measurements, minima, maxima, means, standard deviations, skewness, and kurtosis were computed for all scales. Furthermore, reliability analyses (Cronbach's alpha) were conducted for the scales that were not measured by single items. Table 1 presents the means, standard deviations, and internal consistencies.

Table 1

*Descriptive Statistics and Reliability of The Possession of Character Strengths (VIA-IS) and Positive Experiences (WCQ, JSQ) as Individual Characteristics as well as the Applicability (ACS-RS) of Character Strengths in Work Life and Private Life as Environmental Characteristics*

Scales	Individual characteristics			ACS-RS Work Life			ACS-RS Private Life		
	M	SD	$\alpha$	M	SD	$\alpha$	M	SD	$\alpha$
Character strengths									
Creativity	3.55	0.63	0.88	3.68	0.76	.82	3.51	0.78	0.87
Curiosity	4.10	0.47	0.79	3.56	0.76	.81	3.50	0.77	0.87
Judgment	3.85	0.45	0.79	3.56	0.76	.81	3.46	0.75	0.85
Love of learning	3.91	0.55	0.82	3.93	0.67	.77	3.65	0.73	0.85
Perspective	3.54	0.45	0.75	3.74	0.76	.84	3.53	0.74	0.87
Bravery	3.59	0.48	0.74	2.37	0.87	.86	2.90	0.82	0.88
Perseverance	3.55	0.57	0.84	3.56	0.76	.78	3.67	0.73	0.84
Honesty	3.80	0.40	0.67	4.11	0.64	.72	4.24	0.57	0.76
Zest	3.70	0.52	0.77	3.72	0.67	.71	3.98	0.63	0.78
Love	3.82	0.46	0.73	2.88	0.99	.90	4.20	0.70	0.87

*(Table 1 continues)*

(Table 1 continued)

Scales	Individual characteristics			ACS-RS Work Life			ACS-RS Private Life		
	M	SD	$\alpha$	M	SD	$\alpha$	M	SD	$\alpha$
Kindness	3.75	0.44	0.69	3.65	0.76	.79	4.01	0.63	0.79
Social Intelligence	3.67	0.44	0.73	3.81	0.75	.81	4.14	0.61	0.80
Teamwork	3.64	0.47	0.74	3.62	0.72	.79	3.61	0.76	0.87
Fairness	3.90	0.45	0.76	3.71	0.76	.80	3.72	0.81	0.88
Leadership	3.66	0.45	0.72	3.66	0.86	.86	3.34	0.92	0.91
Forgiveness	3.54	0.51	0.78	3.30	0.74	.79	3.68	0.71	0.81
Modesty	3.22	0.54	0.79	3.56	0.73	.74	3.71	0.67	0.79
Prudence	3.35	0.50	0.72	3.72	0.73	.79	3.55	0.80	0.87
Self-regulation	3.32	0.53	0.71	3.51	0.74	.76	3.20	0.76	0.84
Beauty	3.59	0.52	0.73	3.31	0.88	.85	3.96	0.67	0.83
Gratitude	3.70	0.51	0.80	3.25	0.88	.85	3.99	0.67	0.82
Hope	3.60	0.54	0.80	3.60	0.75	.80	3.90	0.67	0.81
Humor	3.61	0.55	0.85	3.34	0.77	.80	3.76	0.69	0.83
Religiousness	2.81	0.87	0.91	1.98	1.02	.90	2.63	1.17	0.94
Positive experiences									
WCQ <sup>1</sup>									
Pleasure	3.83	0.90	—						
Engagement	3.88	0.98	—						
Meaning	3.76	1.03	—						
JSQ (Job satisfaction)	5.40	0.95	0.80						

Note.  $N = 1,103-1,111$ . Love = Capacity to love and be loved; Beauty = Appreciation of beauty and excellence.

<sup>1</sup> Internal consistencies were not computed (single item measures)

Table 1 shows that the means were slightly above the scale midpoint of 3 in VIA-IS and ACS-RS (except for the religiousness scales). As often observed for satisfaction scales, the mean for the JSQ was considerably above the scale midpoint of 4 ( $M = 5.40$ ). However, skewness and kurtosis indicated normal distribution of the scales. Internal consistencies were  $\geq .70$  for all scales (except honesty and kindness in the VIA-IS with  $\alpha = .67$  and  $.69$ ,

respectively) and were higher for the ACS-RS (median  $\alpha = .80$  and  $.84$  for work life and for private life, respectively) than for the VIA-IS (median  $\alpha = .76$ ). This might be due to higher standard deviations in the ACS-RS compared to the VIA-IS. Corrected item-total correlations of the ACS-RS were satisfactory as they ranged from  $.36$  to  $.87$  with a median of  $.66$  and from  $.48$  to  $.91$  with a median of  $.70$  for work life and for private life, respectively.

**Intercorrelations of the ACS-RS scales.** To find out the magnitude to which the 24 applicability ratings within each area of life were associated with each other, Pearson correlations were computed. The correlation coefficients ranged from  $-.01$  (creativity and self-regulation) to  $.70$  (beauty and gratitude) with a median of  $.26$  in work life. In the private life, correlation coefficients ranged from  $.06$  (zest and self-regulation) to  $.60$  (beauty and gratitude) with a median of  $.26$ . Notably, all coefficients were lower than the internal consistencies indicating that the participants can discriminate between the applicability of the 24 different character strengths in both the work life and the private life.

Furthermore, we were interested in the relationships between the applicability ratings in the work life and the private life for each of the 24 character strengths. As people tend to choose environments fitting their traits (cf., Caspi & Herbener, 1990), simple relationships might be inflated due to the underlying character strengths as traits that determine individuals' choices for similar environments. Hence, we computed partial correlations between the applicability of each strength in work life and its applicability in private life controlling for the VIA-IS score for the particular strength. The correlation coefficients ranged from  $.09$  (kindness) to  $.46$  (bravery) with a median of  $.31$  indicating that those ratings are representations of separate (yet related) constructs.

**Correlations with demographics.** Correlations of scales with age, gender, and educational level were modest in size; shared variance between scales and demographics rarely exceeded 5% (maximum was 10%). However, there were some noteworthy correlation

patterns: Females had systematically higher scores in the scales regarding appreciation of beauty and excellence, gratitude, and the strengths of humanity (in the VIA-IS, and in the ACS-RS for work and private life). The higher the education the more likely people rated the strengths of wisdom and knowledge higher on the VIA-IS and on the ACS-RS for work. Finally, age was positively related to religiousness (on the VIA-IS, and on the ACS-RS for work and private life) as well as to job satisfaction, engagement, and meaning. Hence, it was decided to control for demographics in the subsequently conducted analyses.

### **Examination of the Validity of the ACS-RS**

**Applicability of character strengths in private and work life.** In order to examine whether certain character strengths can be applied more than others and whether there were differences in private and work life, several analyses were conducted. Firstly, a 2 (environment: private vs. work life) x 24 (the character strengths) ANCOVA was computed with environment and character strengths as repeated measures variables, and demographics (i.e., age, gender, and education) as covariates. Partial  $\eta^2$  was computed as the effect size index with scores between .01 and .05, between .06 and .13, and .14 and higher indicating small, medium, and large effects, respectively (Cohen, 1988). Secondly, post hoc tests (Bonferroni) were computed for pairwise comparisons to further examine the nature of main effects. Thirdly, to break down the interaction effect between environment and character strengths, t-tests for dependent samples were computed comparing the applicability for each of the 24 character strengths in private versus work life.

As sphericity was violated, the multivariate test statistics were used as they do not depend upon the assumption of sphericity. Both, the main effects and the interaction were significant ( $p < .001$ ). The pairwise comparison for the small main effect of environment ( $F[1, 1107] = 16.80, p < .001, \text{partial } \eta^2 = .015$ ) indicated that, overall, the character strengths were more often applied in private life than in work life ( $M = 3.66$  vs.  $M = 3.46; p <$

.001). Furthermore, the pairwise comparisons for the large main effect of character strengths ( $F[23, 1085] = 8.62, p < .001$ , partial  $\eta^2 = .154$ ) indicated that the character strengths that were least often applied were religiousness ( $M = 2.31$ ) and bravery ( $M = 2.63$ ; all  $p < .001$ ). Scores between 2 and 3 indicate that strengths were applicable seldom to sometimes. All other strengths were more often applicable. Honesty ( $M = 4.18$ ) and social intelligence ( $M = 3.98$ ) could be most often applied (all  $p < .001$ ) with means indicating that these strengths can be applied often to (almost) always (score = 4.00 to 5.00, respectively).

Furthermore, the statistically significant interaction ( $F[23, 1085] = 3.77, p < .001$ , partial  $\eta^2 = .074$ ) with a medium effect size indicated that different character strengths yielded different patterns in their applicability in private versus work life. Figure 1 shows the pattern of applicability of the 24 character strengths in private and in work life.

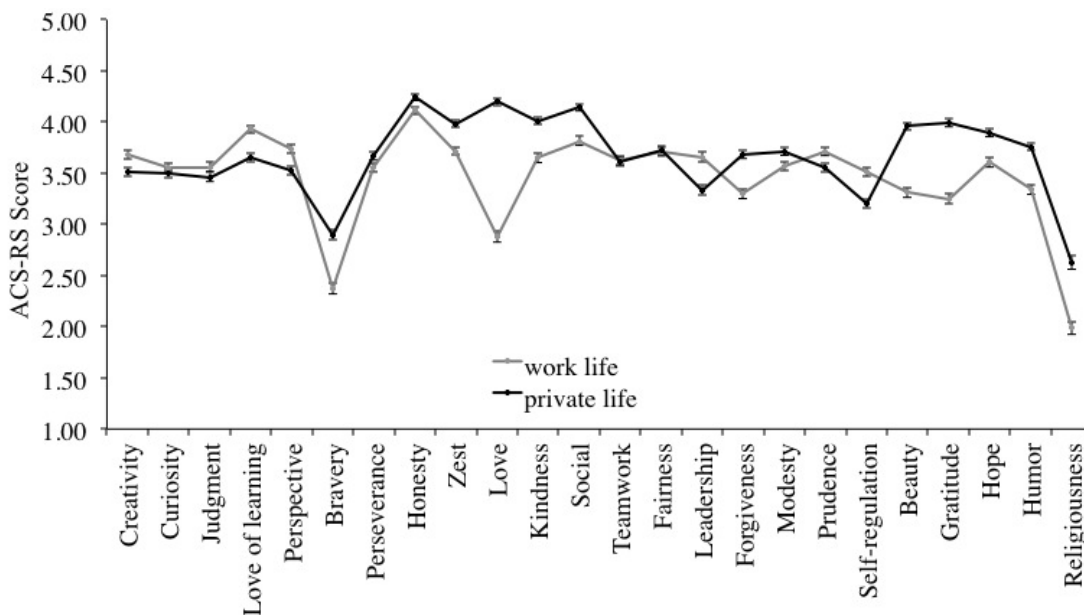


Figure 1. Applicability of the 24 character strengths (ACS-RS score with 95% confidence interval) in private and in work life. Love = Capacity to love and be loved; Beauty = Appreciation of beauty and excellence.

As indicated by Figure 1, the t-test for dependent samples showed that all character strengths of the virtue wisdom and knowledge and the character strengths of leadership, prudence, and self-regulation were more applicable in work than in private life (all  $p < .001$ ;

except for curiosity,  $p < .05$ ). All character strengths assigned to the virtues courage, humanity, and transcendence, as well as the character strengths of forgiveness and modesty could be more applied in private than in work life (all  $p < .001$ ). Applicability in working and private life for fairness and teamwork did not differ ( $p = .70$ ).

**Relationships between possession and applicability of character strengths.** To examine the relationships between possession and applicability of character strengths, and whether there are differences in the relationships for the two environments (i.e., private vs. work life), several analyses were conducted. Firstly, partial correlations (controlled for age, gender, and education) were computed between the corresponding character strengths measured by the VIA-IS and the ACS-RS (separately for private and work life). Secondly, differences between correlation coefficients were tested for significance for each of the character strengths (see Table 2).

Table 2

*Partial Correlations (Controlled For Age, Gender, and Education) Between the VIA-IS Scales and the ACS-RS Scales (For Private Life and Working Life Separately) and Comparison of the Correlations*

Character strengths	Private life	Working life	<i>t</i>
Creativity	.53	.45	2.94**
Curiosity	.33	.27	1.91
Judgment	.36	.25	3.28**
Love of learning	.46	.37	2.90**
Perspective	.26	.19	2.10*
Bravery	.26	.22	1.38
Perseverance	.29	.31	-0.64
Honesty	.30	.21	2.72**
Zest	.47	.43	1.50
Love	.53	.28	7.74**
Kindness	.32	.27	1.52

*(Table 2 continues)*



*(Table 2 continued)*

Character strengths	Private life	Working life	<i>t</i>
Social Intelligence	.28	.24	1.21
Teamwork	.34	.37	-0.91
Fairness	.37	.37	0.00
Leadership	.32	.42	-3.11**
Forgiveness	.33	.38	-1.71
Modesty	.33	.24	2.98**
Prudence	.34	.20	4.51**
Self-regulation	.21	.16	1.53
Beauty	.47	.40	2.56*
Gratitude	.51	.48	1.17
Hope	.53	.41	4.79**
Humor	.58	.55	1.35
Religiousness	.82	.73	7.63**

*Note.*  $N = 1,111$ . All correlation coefficients are significant at  $p < .001$ . Love = Capacity to love and be loved; Beauty = Appreciation of beauty and excellence.  $t$  = significance test for difference between correlation coefficients for the comparison of dependent correlations Steiger (1980).

\* $p < .05$ . \*\* $p < .01$ .

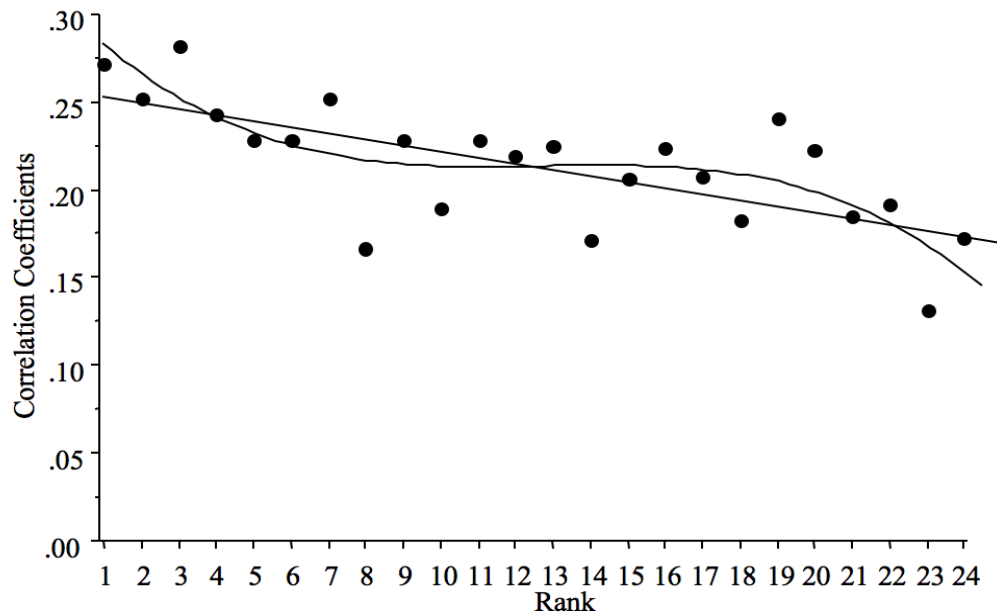
Table 2 shows that all relationships between possessing (VIA-IS) and applying character strengths (ACS-RS) were positive for both, private and work life. The median of correlations was .34 for both, private (ranging from .21 to .82) and work life (ranging from .16 to .73), respectively. In 12 out of 24 character strengths, correlation coefficients did not differ between private life and work life; 11 out of 12 were higher for private life than for work life (e.g., capacity to love and be loved, religiousness, hope, and prudence). The only exception was leadership, which showed a stronger relationship between possessing the character strength and its applicability in work than in private life.

### **Relationships Between Applicability of Strengths and Positive Experiences at Work as a Function of the Centrality of the Strengths**

It was expected that the applicability of strengths with highest ranks (i.e., high fit of possession and application of strengths) would yield stronger relationships to positive experiences at work than the applicability of strengths with lower ranks. Positive experiences at work studied here were job satisfaction (JSQ) as well as pleasure, engagement, and meaning fostered by one's work (WCQ). For an examination of this expectation, partial correlations (controlled for age, gender, and education) between the applicability of the individuals' highest (rank 1), second highest (rank 2), and so forth up to the 24th character strength (rank 24) and the indicators of positive experiences at work were computed. A first inspection of the correlation coefficients indicated that correlation coefficients decreased as the rank of character strengths increased. To test the statistical significance of the decreases, Spearman rank correlations were computed between the 24 ranks and the corresponding correlation coefficients ( $N = 24$ ) for each of the positive experiences. Correlation coefficients were significant for job satisfaction ( $r = -.63, p < .01$ ), pleasure ( $r = -.59, p < .01$ ), and engagement ( $r = -.65, p < .01$ ). Meaning ( $r = -.35$ ) did not yield significant correlation coefficients; nevertheless, the correlation was in the expected direction ( $p > .05$ ).

For an in depth examination of the nature of the trend in the positive experiences at work, several analyses were conducted. Firstly, in order to increase reliability of the single item measures of positive experiences at work, a composite score was computed by conducting a principal component analysis using the variables clearly related to positive experiences at work by content (the JSQ and the three WCQ ratings). The Eigenvalues were 2.66, .54, .48, and .32 indicating that there was a clear one-dimensional factor solution explaining 66.49% of the variance. Factor loadings ranged from .77 (job satisfaction) to .86 (engagement at work). The factor was labeled as "positive experiences at work". Factor scores were computed by means of regression. Secondly, partial correlations were computed (controlled for age, gender, and education) between the applicability of the individuals'

highest strength (rank 1), second highest (rank 2), and so forth up to the 24th character strength (rank 24) and the factor scores of “positive experiences at work”. Figure 2 presents the pattern of the correlation coefficients depending on the rank.

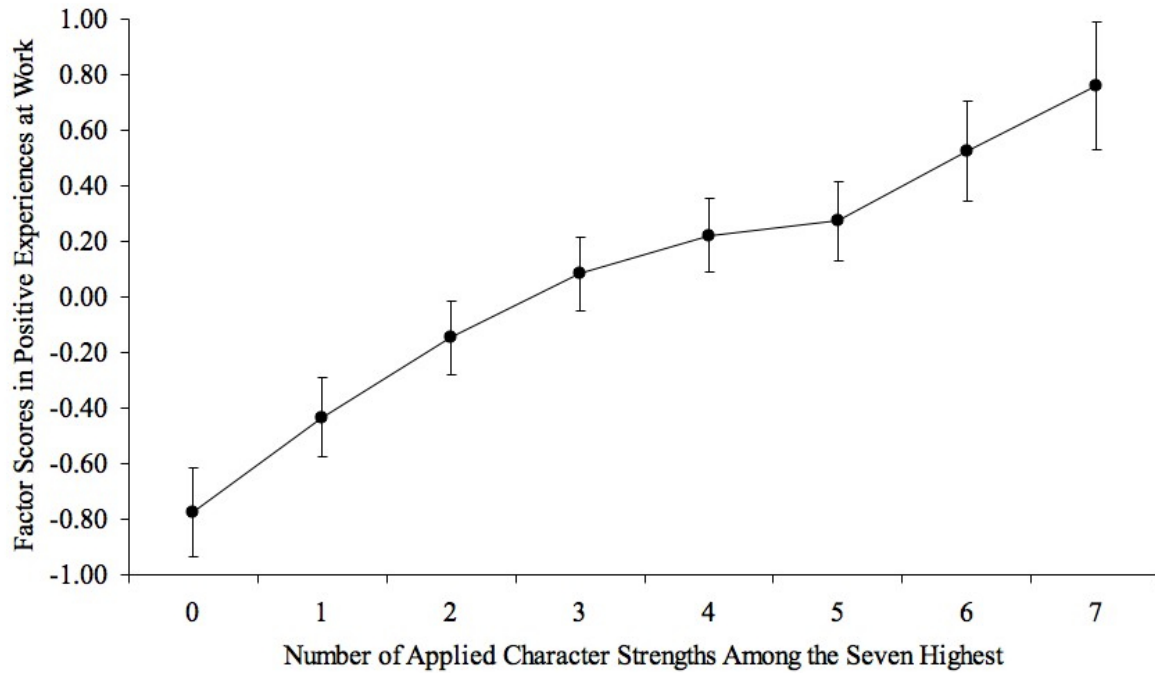


*Figure 2.* Partial correlation coefficients (controlled for age, gender, and education) between applicability of character strengths and positive experiences at work as a function of the character strengths’ rank (i.e., centrality). Computed regression lines of linear and cubic regression analysis are presented.

Figure 2 shows that the coefficients tended to decrease from rank 1 to rank 5 or 6, followed by a plateau up to rank 16, with another decrease until rank 24. Thirdly, to investigate the form of the relationships, these 24 correlation coefficients were entered into a regression analysis as criterion variables, with rank as the predictor variable, testing the linear, quadratic, and cubic trends. The linear and cubic trends were significant. The former explained 46% of the variance in the correlation coefficients ( $F[1, 22] = 18.93, p < .001$ ) and the linear and cubic trends together explained 61% of the variance ( $F[3, 20] = 10.57, p < .001$ ).

### **The Number of Applied Signature Strengths and Positive Experiences at Work**

To examine, whether there is a satiation point for the number of applied signature strengths located between three and seven strengths with respect to the effect on positive experiences at work, several analyses were conducted. Firstly, groups were computed defining participants that can apply 0 to 7 of their seven highest character strengths. A conservative way was selected in order to minimize effects of answer styles. A character strength among the seven highest within an individual was only defined as being applied, if (a) the ACS-RS score was 4 or higher (i.e., this is equal to an applicability that is a least rated as “often”) and if (b) the VIA-IS score was 3.5 or higher (i.e., this is equal to possessing a character strength at least slightly). It was assumed that people could not apply character strengths-relevant behavior that they do not possess to, at least, a small degree. Secondly, a univariate ANCOVA was computed with the number of character strengths that are applied at work as classification variable (8 groups: 0 to 7 strengths applied; with group sizes ranging from 59 to 181) and the factor scores of “positive experiences at work” as the dependent variable. Again, age, gender, and education entered the analysis as covariates. Repeated contrasts were utilized to check whether positive experiences differed when using one strength instead of none, two strengths instead of one, three strengths instead of two etc. The ANCOVA indicted a large effect of the number of strengths that were applied at work on positive experiences at work,  $F(7, 1106) = 33.15, p < .001, \eta^2 = .175$ . Figure 3 shows the average of positive experiences at work as a function of number of the seven highest character strengths applied at work.



*Figure 3.* Average factor scores in positive experiences at work (with 95% confidence interval) as a function of number of the seven highest character strengths applied at work. Group sample sizes were  $n_0 = 123$ ,  $n_1 = 152$ ,  $n_2 = 181$ ,  $n_3 = 175$ ,  $n_4 = 171$ ,  $n_5 = 151$ ,  $n_6 = 94$ , and  $n_7 = 59$ .

Figure 3 shows that group means in positive experiences at work ranged from -.78 to .76 when applying zero to seven of the highest strengths, which was a range equivalent to 1.5 standard deviations. The repeated contrasts revealed that using one instead of no strength ( $p < .01$ ), two instead of one ( $p < .01$ ), and three instead of two ( $p < .05$ ) yielded in a significant increase in positive experiences at work. The curve subsequently flattened; applying four instead of three or five instead of four did not make a difference in positive experiences at work. There seemed to be a satiation point between three and five strengths. However, positive experiences at work slightly increased when six or seven strengths could be applied (i.e., one half standard deviation). When considering the eight or nine highest character strengths, there was no significant increase in positive experiences at work. Interestingly, group size dropped for the groups being able to apply six ( $n_6 = 94$ ) or seven

strengths ( $n_7 = 59$ ) indicating that applying a sixth or seventh signature strengths was relatively rare.

### **Discussion**

The combination of the ACS-RS and the VIA-IS gives a new approach for the investigation of the congruence between signature strengths and the situational circumstances in specific environments of interest. The present study compared the character strengths of a person with the situational circumstances in his/her workplace. In line with the expectation, there were positive relationships between the degree of congruence and positive experiences at work. Correlations between applicability of strengths and positive experiences increased with the centrality of the strengths (irrespective of the nature of the strengths). This study provides strong empirical evidence supporting the construct validity of signature strengths. Independent from content, character strengths differ in their importance. Actually, the amount of positive experiences at work increased with the number of signature strengths that could be applied. A “satiation point” was observed at around four strengths, which is within the range of the number of signature strengths (i.e., between three and seven) stipulated by Peterson and Seligman (2004). However, this finding does not mean that each person owns four signature strengths. This number results from analyzing data across but not within participants. There will be individual differences in the number of signature strengths. Peterson and Seligman (2004) assumed that signature strengths are characterized by ten criteria (e.g., a sense of ownership, a feeling of excitement while using it, and an intrinsic motivation to use it). These criteria would need to be considered in future studies investigating individual differences in the number of signature strengths.

Studies of the congruence between the signature strengths and the situational circumstances should not to be confused with studies of the fit between other characteristics of a person and the attributes of the work environment. This fit has often been highlighted in

psychological research on career choice and development as being decisive for positive work-related outcomes (e.g., Brown, 2002; Caplan, 1987; Holland, 1997). For example, the degree of fit relates to *job satisfaction* (e.g., Gati, Garty, & Fassa, 1996; Lyons & O'Brian, 2006) and *pleasure* as a positive emotion towards the job (Edwards, 1996). The specific role of character strengths as important characteristics of a person within the workplace remains understudied. The congruence between the job tasks and the individual signature strengths can be interpreted as both a need-supplies and a demands-abilities related fit (cf., Kristof, 1996). The individual's signature strengths form the individual's need to be allowed to behave congruent with those strengths. If the job tasks do allow for them, then the job supplies this need. This notion is also in line with research that highlights the need for opportunities for the use of individual capacities for promoting job satisfaction, engagement, or productivity at work (e.g., Lowe, 2010; Walton, 1975). However, the job tasks may demand strengths-related behavior that a person is able to show (or not) due to the degree of possession of the relevant strengths. The need-supplies related fit was most of interest here as the starting point was the constellation of strengths within the individual and their applicability at work, but not the strengths most required by the job. Additionally, incremental validity might be studied with respect to common operationalizations of person-job fit like values, abilities or interests (e.g., Holland, 1997; Kristof, 1996) when predicting job satisfaction or other work related outcomes. Nevertheless, the present study provides initial evidence that the strength-related congruence between a person and his/her job might play a role in positive experiences at work.

As a methodological extension of the present research, the applicability of character strengths might be measured by means of peer-ratings as well. A replication of the findings using peer-ratings would also provide further validation, as the findings regarding the congruence between the signature strengths of a person and the applicability of those

strengths could in part be due to methodological reasons – both, possession and applicability of character strengths as well as the positive experiences at work were measured through self-ratings. However, the identification of signature strengths was a conservative one, because they were identified by rank ordering the scores in possessing the character strengths. Consequently, the impact of response styles was kept constant at least to some degree. Furthermore, generalizability of results to less educated people should be examined, as individuals with a very high educational level characterized the sample for this study.

Despite the implicit assumption that the positive experiences at work are the result of the application of individual signature strengths, causality cannot be established from the cross-sectional data reported here. This paper examined whether the application of individual signature strengths was robustly associated with positive experiences at work. Further research utilizing longitudinal design or intervention studies would be needed to address the assumed causality.

The focus of the present paper was on an individual worker's perspective. However, the work context is much more complex and therefore, antecedents of positive experiences at work are manifold as well. For example, the relationships among co-workers as well as between employees and managers, organizational culture, and leadership practices may play important roles (cf., Lowe, 2010). Furthermore, positive experiences at work like job satisfaction and engagement relate to efficiency and effectiveness (e.g., Judge, Thoresen, Bono, & Patton, 2001; Stairs & Galpin, 2010). Further research needs to study more complex models moving beyond the individual worker's perspective to study the application of strengths within a broader context, for example, to study how different leadership practices foster or hinder the application of strengths.

Compared to the possession of character strengths, variance in the applicability of character strengths-relevant behavior tended to be higher. Hence, it might be interesting to



investigate specific jobs, as the sample investigated here was a mixed sample with employees from very different occupations. However, it might be of interest to study which character strengths are the most appropriate ones within certain occupational fields as well. Research has already pointed to the role of specific character strengths within certain jobs; for example, the strengths of humanity were especially related to job satisfaction in jobs that involve other people like teaching or sales (Peterson & Park, 2006). Additionally, strengths like bravery, honesty, and teamwork discriminate between a civilian sample and military samples (Matthews, Eid, Kelly, Bailey, & Peterson, 2006). It might be expected, that those persons who especially possess (and apply) those strengths, better fit into these environments. Consequently, their job satisfaction and job performance should be higher. Results of studies investigating these questions will provide further evidence for the role of character strengths in the workplace as well.

The present study indicated that the ACS-RS seems to be a reliable and valid instrument for the measurement of situational circumstances that foster or hinder character strengths-relevant behavior. Reliability was satisfactory in terms of internal consistency and interrater-reliability. Validity of the ACS-RS was studied by means of replicating knowledge from research on situational influences on personality and extending it to the concept character strengths. As people tend to choose situations suiting their personality (Caspi & Herbener, 1990), possession and applicability of character strengths were positively related.

Furthermore, the situational influences on trait-relevant behavior have been noted earlier in personality research (Ten Berge & De Raad, 1999), but this study extends this to the trait concepts of the character strengths as postulated by Peterson and Seligman (2004). Kenrick, McCreath, Govern, Kind, and Bordin (1990) found that some traits could be observed across more situations than others. This was found for character strengths as well; bravery and religiousness were the strengths least often applicable, and honesty and social

intelligence were the ones most often applicable with the rest of the strengths ranging in between. Differences in the degree of applicability as measured with the ACS-RS can be interpreted as first hints that character strengths do differ in the degree of being tonic vs. phasic. Nevertheless, frequency of applicability is an approximation for the degree of being tonic vs. phasic. Further studies are needed, for example, examining whether the degree of being tonic vs. phasic is one dimension.

Additionally, applicability of certain character strengths as measured with the ACS-RS differed with respect to the environment considered (i.e., private life vs. work life). For example, leadership was more applicable at work than at home and the capacity to love and be loved was more applicable at home. This result is in line with previous research stipulating that situations differ in their suitability for the expression of certain traits (Ten Berge & De Raad, 1999; Kenrick et al., 1990).

The paragraphs describing strength-relevant behavior in the ACS-RS rely on the definitions presented by Peterson and Seligman (2004). Those paragraphs entail more information than simple labels of the strengths. This makes sure the whole bandwidth of the character strengths is presented with less room for interindividually different interpretations regarding the meaning of the character strengths. In the present study, the applicability of character strengths at work and in the private life were studied. However, another or more specific environments or situations (e.g., leisure time, project a vs. project b) can be studied by emphasizing it in the instruction of the ACS-RS.

This study showed that character strengths matter in vocational environments irrespective of their content. Strengths-congruent activities at the workplace are important for positive experiences at work, like job satisfaction as well as experiencing pleasure, engagement, and meaning fostered by one's job. One operationalization of strengths-congruence could be the overlap between the signature strengths (as positive traits) of an

individual and the demands of the workplace. Using the VIA-IS and the ACS-RS together in career counseling could give information on the signature strengths of an individual and the degree of applicability of these strengths in their work. Any discrepancies identified might be addressed by a systematic, individualized intervention strategy to reduce them (e.g., by changes in workplace design and job tasks), which in turn could lead to an increase in job satisfaction and happiness at work.

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**Part III**

**When the Job is a Calling: The Role of Applying One's Signature Strengths at Work**

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Abstract

The present study investigates the role of applying the individual signature strengths at work for positive experiences at work (i.e., job satisfaction, pleasure, engagement, meaning) and calling. A sample of 111 employees from various occupations completed measures on character strengths, positive experiences at work, and calling. Co-workers ( $N = 111$ ) rated the applicability of character strengths at work. Correlations between applicability of character strengths and positive experiences at work decreased with intra-individual centrality of strengths (ranked strengths from the highest to the lowest). Level of positive experiences and calling were higher when four to seven signature strengths were applied at work compared to less than four. Positive experiences partially mediated the effect of the number of applied signature strengths on calling. Implications for further research and practice will be discussed.

*Keywords:* character strengths; signature strengths; job satisfaction; calling; pleasure; engagement; meaning; VIA-IS; positive psychology

### Introduction

Peterson and Seligman (2004) introduced the Values in Action (VIA) classification of strengths to describe the good character as an important instance of optimal human functioning. Character strengths represent the components of the good character as measurable positive individual differences that exist as continua and not as categories (McGrath, Rashid, Park, & Peterson, 2010). The VIA classification describes 24 character strengths. Peterson and Seligman (2004, p. 18) stipulate most people have between three and seven core or “signature” strengths among the 24. Signature strengths are the ones “[...] that a person owns, celebrates, and frequently exercises”. Seligman (2002, 2011) highlighted that the application of signature strengths leads to pleasure, engagement, and meaning. People most prefer a job congruent to their signature strengths (Park & Peterson, 2007) and the deployment of character strengths is related to job satisfaction and meaning at work (Littman-Ovadia & Steger, 2010). Taken together, positive experiences at work (e.g., job satisfaction as well as pleasure, engagement, and meaning at work) are facilitated when the individual signature strengths (i.e., those strengths that are most central for an individual) are applied at work.

*Job satisfaction* is the domain specific global, cognitive assessment of the quality of life relating to work (Diener, Suh, Lucas, & Smith, 1999). Pleasure (hedonism), engagement (flow), and meaning (eudemonia) were summarized to the orientations to *happiness*, describing three separate yet related routes of life to obtain happiness (Peterson, Park, & Seligman, 2005b). Furthermore, positive experiences at work (pleasure, engagement, meaning, and job satisfaction) are inherent aspects of a *calling* (e.g., Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985; Novak, 1996; Wrzesniewski, McCauley, Rozin, & Schwartz, 1997). Individuals with a calling regard their work to be their purpose in life rather than a means for financial rewards (job) or advancement (career; Elangovan, Pinder, &

McLean, 2011; Wrzesniewski et al., 1997). A calling or vocation is a “function or career toward which one believes himself to be called” (Novak, 1996, p. 17; see also Dik & Duffy, 2009). Calling in this sense does not necessarily entail the religious connotation of being called by god (cf., Bunderson & Thompson, 2009; Weiss, Skelley, Haughey, & Hall, 2004), but refers to having uncovered the “personal destiny [...] something that we are good at and something we enjoyed” (Novak, 1996, p. 18; i.e., pleasure and satisfaction) entailing one’s work. The work is also perceived meaningful, due to helping other people or the broader society (directly or indirectly; Dik & Duffy, 2009). The engagement in the calling is central to one’s identity when experiencing a calling (Dobrow & Tosti-Kharas, 2011). Therefore, one might expect that higher levels of positive experiences at work are associated with a calling orientation. The present study investigated this assumption by examining the associations between the positive experiences at work and calling.

It was also highlighted that a calling orientation requires a match between a person and his/her job (Nowak, 1996; Weiss et al., 2004). In terms of Weiss et al., it is important how our personal gifts and talents fit into our vocation. According to Nowak (p. 34) “a calling [...] must fit our abilities“. We studied this match with respect to character strengths. The question arises, whether the application of one’s signature strengths at work facilitates a calling orientation. However, it was also hypothesized that the application of one’s signature strengths at work relates to positive experiences at work, which also relate to calling. This leads to the question whether the relationship between the application of one’s signature strengths at work and calling is mediated by positive experiences. The present study addressed these questions by examining a mediation model of the effect of the application of signature strengths at work on calling mediated by positive experiences at work.

### **The Application of Character Strengths at Work**

The *application* of a character strength depends on two conditions (see Harzer, 2012; Harzer & Ruch, in press). Firstly, the individual needs *to possess the strength* to a certain degree to be able to show strength-relevant behavior (i.e., applying it; also see Fishbein & Ajzen, 2010; Saucier, Bel-Bahar, & Fernandez, 2007). The Values in Action Inventory of Strengths (VIA-IS; Peterson, Park, & Seligman, 2005a) is the standard measure for the possession of character strengths (as defined in the VIA classification) in adults for basic research. A variety of studies show its reliability and validity (e.g., Güsewell & Ruch, 2012a; Müller & Ruch, 2011; Park, Peterson, & Seligman, 2006; Peterson, Park, & Seligman, 2006; Peterson et al., 2005a).

Secondly, the situational circumstances in a certain environment (e.g., at the workplace or in private life) need to allow for the expression of a strength, as trait-related behavior needs conducive circumstances to be displayed (Saucier et al., 2007; Ten Berge & De Raad, 1999). Therefore, the *applicability* of a given character strength was defined as the degree to which situational circumstances allow an individual to display strengths-relevant behavior (Harzer, 2012; Harzer & Ruch, in press). The situational circumstances at the workplace can be both, externally relating to aspects mostly independent from the individual and internally referring stronger to the individual's perception (cf., Saucier et al., 2007). Harzer and Ruch (in press) focused on the individuals' perception of two external and two internal influences (see Harzer, 2012). The two *external* influences were (a) the normative demands at work and (b) the appropriateness of strength-related behavior at work. The two *internal* influences were (c) the perceived presence of factors that may facilitate or impede strengths-related behavior like time pressure and (d) the intrinsic motivation to show certain behavior. The Applicability of Character Strengths Rating Scales (ACS-RS; Harzer, 2012; Harzer & Ruch, in press) reliably and validly measures those influences.

While it might be more parsimonious to ask for the use of strengths in general (Wood, Linley, Maltby, Kashdan, & Hurling, 2011), or to utilize single item measures for the frequency of strength application (Littman-Ovadia & Steger, 2010), such approaches do not allow for the discrimination of the various influences on behavior (i.e., external and internal, as well as degree of possession). The combination of the VIA-IS and the ACS-RS allows for an operationalization of the strengths-related congruence between an individual and the situational circumstances at work. This *congruence* is proportional to the extent to which a job allows for the application of one's signature strengths (Harzer, 2012; Harzer & Ruch, in press). It increases with the individual centrality of the character strengths that are applicable at work. The higher the position of a strength in one's individual rank-order, the more central and important is its degree of applicability at work for positive experiences and calling. The correlation coefficients representing the association between applicability of strengths and positive experiences at work indeed increased with the centrality of the strengths (irrespective of their nature; Harzer & Ruch, in press).

Another way of operationalization for the congruence between an individual and the situational circumstances at work is the number of signature strengths that can be applied at work (cf., Harzer, 2012; Harzer & Ruch, in press). The signature strengths were operationalized as the seven character strengths with the highest degree of possession within each individual (i.e., rank 1 to 7 in the VIA-IS). Those strengths were only defined as being applied, if (a) the ACS-RS score was 4 or higher (i.e., this is equal to an applicability that is at least rated as "often") and if (b) the VIA-IS score was 3.5 or higher (i.e., this is equal to possessing a character strength at least slightly). It was assumed that people can apply character strengths-relevant behavior only if they possess the strength at least to a small degree. The resulting score varies from 0 to 7 applied signature strengths at work. Harzer and Ruch (in press) studied more than 1'000 adults of different occupations to examine the

relationships between the application of individual signature strengths and positive experiences at work. Job satisfaction as well as pleasure, engagement, and meaning at work were combined to a composite score for positive experiences at work via principal component analysis to examine the influence of those experiences at work in general. Data analysis showed that the higher the number of signature strengths was that could be applied at work, the higher the reported level of positive experiences at work. However, this relationship was not strictly linear, as there seemed to be a satiation point between three and five applied strengths where the increase in positive experiences flattened for further signature strengths that could be applied at work. Consequently, there might be a critical minimum number of applied signature strengths, likely around four character strengths, which fosters positive experience at work.

### **The Present Study**

The present study examines the role of applying one's individual signature strengths and positive experiences at work for a calling orientation. The purpose was threefold.

*Firstly*, the relationships between the applicability of character strengths and positive experiences at work were investigated. This is replicating the findings reported by Harzer and Ruch (in press), but with an added degree of sophistication in the measurement. In contrast to Harzer and Ruch who reported self-rating data only, also peer-rating data was utilized as well, preventing the artificial inflation of relationships due to the common method variance (Doty & Glick, 1998). Co-workers experience the workplace every day (i.e., external influences) and can observe the individuals' behavior within this context (i.e., internal influences). Therefore, they can validly rate the applicability of character strengths at work. Self-ratings were used for the ratings concerning the possession of character strengths, the positive experiences at work, and calling. As positive experiences are subjective perceptions, the self-rater is the most valid judge. Furthermore, the workplace is a formal situation that

does not always encourage behavior suiting an individual's trait pattern (Ten Berge & De Raad, 1999). Consequently, strengths-relevant behavior might not always be observable and co-workers might not be able to provide a full reflection of the self-raters' possession of the character strengths.

In line with Harzer and Ruch (in press), it was expected that (a) the correlations between applicability of strengths and positive experiences at work (i.e., a composite score of job satisfaction, pleasure, engagement, and meaning) would increase with the centrality of the strengths. It should be highest for the signature strengths and lower for the lower ranked strengths within an individual. (b) Positive experiences at work are expected to increase with the number of signature strengths that can be applied at work. It was hypothesized that there might be a critical minimum number of applied signature strengths, which may be expected to be located around four character strengths.

The second and the third aim add something new to the research on character strengths. The *second* aim refers to the examination of the relationships between calling and the positive experiences at work as well as the number of applied signature strengths at work. Based on the theoretical assumptions concerning calling described above, positive associations between calling and the positive experiences at work were expected. Furthermore, we hypothesized that the minimum number of applied signature strengths for positive experiences at work would also differentiate between the people seeing their work as a calling and those who do not see their work as a calling.

*Thirdly*, we wanted to find out whether the number of signature strengths that can be applied at work directly facilitated a calling or whether this relationship was mediated by the enhancement of positive experiences. A path model was utilized to test this with the number of applied signature strengths as independent variable, positive experiences as mediator, and calling as dependent variable. It was examined how the direct relationship between the



number of applied signature strengths and calling changed when positive experiences at work entered the analysis as mediator.

## Method

### Participants

*Self-raters.* The sample consisted of 111 German-speaking adult volunteers (60 men, 51 women). Their mean age was 47.21 years ( $SD = 8.70$ ; range 25-64 years). Self-raters were highly educated as  $n = 70$  indicated having a Master's degree and  $n = 20$  a PhD;  $n = 14$  had finished an apprenticeship, and  $n = 7$  the A-levels. Participants represented a wide array of occupations (e.g., like medical doctors, lawyers, mechanists, and office workers). The most prevalent occupational fields ( $n \geq 5$ ) were  $n = 10$  teachers,  $n = 6$  professional advisers, and  $n = 5$  consultants.

*Peer-raters.* The sample consisted of 111 co-workers (51 men, 60 women) of the self-raters. Their mean age was 42.82 years ( $SD = 10.64$ ; range 19-71 years). Peer-raters were highly educated as  $n = 68$  indicated having a Master's degree and  $n = 11$  a PhD;  $n = 24$  had finished an apprenticeship, and  $n = 8$  the A-level. Mean rating of how well they know the self-raters was 6.88 ( $SD = 1.23$ ; range 5-9; rating from 1 = *not at all* to 5 = *to some extent* to 9 = *very well*). That indicated that the peers knew the self-raters well and were therefore able to judge their behavior at the workplace.

### Instruments

**Self-rating measures.** The *Values in Action Inventory of Strengths (VIA-IS*; Peterson et al., 2005a) is a questionnaire consisting of 240 items in a 5-point Likert-scale format (from 1 = *very much unlike me* to 5 = *very much like me*) measuring the 24 character strengths of the VIA classification (10 items for each strengths). A sample items is "I am always coming up with new ways to do things" (creativity). The 24 scales of the German version of the VIA-

IS (Ruch, Proyer, Harzer, Park, Peterson, & Seligman, 2010) showed high reliability (median  $\alpha = .77$ ) and high stability over 9 months (median test-retest correlation = .73). Self- and peer-rating forms correlated in the expected range (median correlation = .40). In the present study, internal consistencies ranged from .61 (prudence) to .91 (religiousness) with a median of .76.

The *Job Satisfaction Questionnaire* (JSQ; Andrews & Withey, 1976) consists of five items in a 7-point Likert-scale (from 1 = *terrible* through 7 = *delighted*) measuring job satisfaction. Sample items are “How do you feel about your job?” or “How do you feel about the people you work with- your co-workers?” The responses are averaged to provide a total job satisfaction score. The JSQ showed high reliability ( $\alpha = .81$ ) and convergent validity ( $r = .70$ ) to other measures of job satisfaction (Rentsch & Steel, 1992). The German version of JSQ used here showed high reliability ( $\alpha = .80$ ) as well (Harzer & Ruch, in press). Internal consistency was .74 in the present study.

The *Work Context Questionnaire* (WCQ; Ruch, Furrer, & Huwyler, 2004) is a three-item questionnaire measuring the extent to which one’s job allows for pleasure, to which it fosters one’s potentials (engagement) and to which it allows for meaning. Answers are given on a 5-point Likert-scale (1 = *totally disagree* through 5 = *totally agree*). Validity of the ratings was shown, as they were meaningfully associated with other variables (Ruch et al., 2004). For example, engagement was positively related to the promotion level of employees. Pleasure and meaning were positively related to satisfaction with the job.

The *Work-Life Questionnaire* (WLQ; Wrzesniewski et al., 1997) is a three-item questionnaire measuring the stance towards work as a job, career, and calling. Three brief scenarios, which describe individuals who approached work as a job, a profession, or a calling, are rated on a 4-point Likert-scale (1 = *not at all like me* through 4 = *very much like me*). The WLQ scenarios scores were meaningfully related to items asking about specific

aspects of relations to work that are relevant to the distinction of job, career, and calling (Wrzesniewski et al., 1997). A German version of WLQ was utilized. Three psychologists translated the WLQ, and the initial version of the German WLQ was created by committee approach (Butcher & Pancheri, 1976). A bilingual retranslated this version, a few modifications were made and items were checked for understandability. In the present study, only the calling scenario was examined.

**Peer-rating measure.** The *Applicability of Character Strengths Rating Scales (ACS-RS*; Harzer & Ruch, in press) measures the extent to which each of the 24 character strengths of the VIA classification is applicable at work<sup>1</sup>. For each of the character strengths, short paragraphs are provided describing character strengths-relevant behavior based on the definitions by Peterson and Seligman (2004; e.g., kindness: Being nice, helpful, kind, and caring without expecting any reward). These behaviors are rated on a 5-point Likert-scale (1 = *never* though 5 = [*almost*] *always*) for (a) normative demands of a situation (actual wording: “it is demanded”), (b) appropriateness of the behavior (“it is helpful”), (c) perceived presence of factors that may facilitate or impede the behavior (“I do it”), and (d) intrinsic motivation to show it (“it is important for me”). As these ratings are very abstract and the actual wording in everyday language is very superficial, their meaning is described in the instruction with an example highlighting the differences between those ratings and that the answers might differ across those ratings<sup>2</sup>. A total of 96 items measures the applicability of

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<sup>1</sup> Another environment or situation (e.g., leisure time, project a vs. project b) can be studied by emphasizing it in the instruction of the ACS-RS.

<sup>2</sup> Example given in the instruction is about kindness rated by a nurse: A nurse’s job description entails many comments about hygiene but less about kindness and they do not talk much about it in the team. That is why she would rate “it is demanded” as seldom (rating = 2). As she realized that caring for patients is easier when being kind to them she rates that “it is helpful” often (rating = 4). Furthermore, it is usually important for her to interact with patients in a kind way and she therefore would rate “it is important for me” as 4 = often. However, the workload is very high and therefore impedes kind interactions some of the time (“I do it” = 3). In total kindness would have an applicability score of 3.25, which means that kindness is sometimes applicable at work.

the 24 character strengths with the 4 ratings for each of the strengths. The ARC-RS showed satisfactory internal consistency and inter-rater agreement judging the same workplaces (Harzer & Ruch, in press). Internal consistencies ranged from .77 (zest) to .93 (religiousness) with a median of .83 in the present study.

## **Procedure**

**Data collection.** Participants completed the questionnaires and provided information on demographics via the Internet. Testing via the Internet has been criticized in different occasions (e.g., for sample biases), but standards for the implementation of Internet-delivered-testing (Coyne & Bartram, 2006) facilitate this way of data collection. Furthermore, there is empirical evidence that data collected via the Internet leads to similar findings as more traditional paper-pencil methods (Gosling, Vazire, Srivastava, & John, 2004).

Self-raters were acquired through press coverage (e.g., newspaper and several magazines) highlighting the requirement for participation of having a job with a percentage of employment of at least 50%. After filling in the questionnaires, the self-raters asked a co-worker to fill in the peer-ratings. Matching of ratings was done by means of a code that the self-raters created themselves and told the peer-raters. Peer-ratings were given anonymous and both, peer- and self-raters were informed about this beforehand. Hence, self- and peer-rates filled in the questionnaires independent from each other. Neither self-raters nor the peer-raters were paid for participating, but self-raters were given a feedback of individual results when expressing interest. Peer-ratings were not part of the feedback and both self- and peer-raters were informed about this beforehand.

**Composite score for positive experiences at work.** A composite score for the positive experiences at work was computed by conducting a principal component analysis using the JSQ and the three WCQ scales as variables to compute factor scores (cf., Harzer &

Ruch, in press). One Eigenvalue exceeded unity, and the Scree-plot (Eigenvalues were 2.49, .71, .52, and .28) and a parallel analysis (Horn, 1965; Eigenvalues were 1.21, 1.06, 0.94, and 0.74) suggested unidimensionality. This single factor explained 62.31% of the variance and the loadings of the variables ranged from .67 (pleasure at work) to .82 (engagement at work). The factor was labeled “positive experiences at work”.

## **Results**

### **Preliminary Analyses**

The means ranged from 2.83 (religiousness) to 4.13 (curiosity) in the VIA-IS, and from 1.93 (religiousness) to 4.09 (honesty) in the ACS-RS. Means in the measures for the positive experiences were 3.98, 4.08, and 3.80 for WCQ pleasure, engagement, and meaning, respectively, as well as 5.66 in the JSQ. WLQ calling had a mean of 2.57. Thus, the means were slightly above the scale midpoint of 3 in the VIA-IS and the ACS-RS (except for the religiousness scales) as well as in the WCQ. In line with frequent observations on satisfaction scales, the mean in the JSQ was considerably higher than the scale midpoint of 4. However, the analysis of skewness and kurtosis still indicated normal distribution for all the scales.

Correlations of all the scales with age, gender, and educational level were modest in size; shared variance between scales and demographics rarely exceeded 5% (maximum was 10%). However, some correlation patterns were noteworthy: For example, females had systematically higher scores in the scales appreciation of beauty and excellence in the VIA-IS, and love in the ACS-RS. Age was positively related to forgiveness in the VIA-IS as well as to engagement, and meaning at work. Finally, higher levels of education went along with love of learning in the VIA-IS and in the ACS-RS as well as with meaning at work. Hence, it was decided to control for demographics in the subsequently conducted analyses.

### **Applicability of Character Strengths and Positive Experiences at Work**

It was expected that the correlations between applicability of strengths and positive experiences at work would increase with the centrality of the strengths (irrespective of their nature). It should be highest for the signature strengths and lower for the lower –ranked strengths. This was tested by means of partial correlations (controlled for age, gender, and education) between the applicability of the strengths (ACS-RS scores) sorted by rank<sup>3</sup> and the factor ”positive experiences at work”. This yielded 24 correlation coefficients between the applicability of the individuals’ highest (rank 1), second highest (rank 2), and so forth up to the 24<sup>th</sup> character strength (rank 24) and positive experiences at work. A first inspection of the correlation coefficients indicated that correlation coefficients decreased numerically as the rank of character strengths increased. To test the statistical significance of the decrease, Spearman rank correlation was computed between the 24 ranks and the corresponding correlation coefficients that verified the impression of the first inspection ( $R[24] = -.46$ ,  $p < .05$ ).

### **Number of Applied Signature Strengths and Positive Experiences at Work**

It was expected that positive experiences at work would increase with the number of signature strengths applied at work and that there might be a crucial number of applied signature strengths. To examine these assumptions, groups were computed defining participants that can apply none to seven of their seven highest character strengths. A character strength among the seven highest within an individual was only defined as being applicable, if (a) the ACS-RS score (peer-rating) was 4 or higher (i.e., this is equal to an

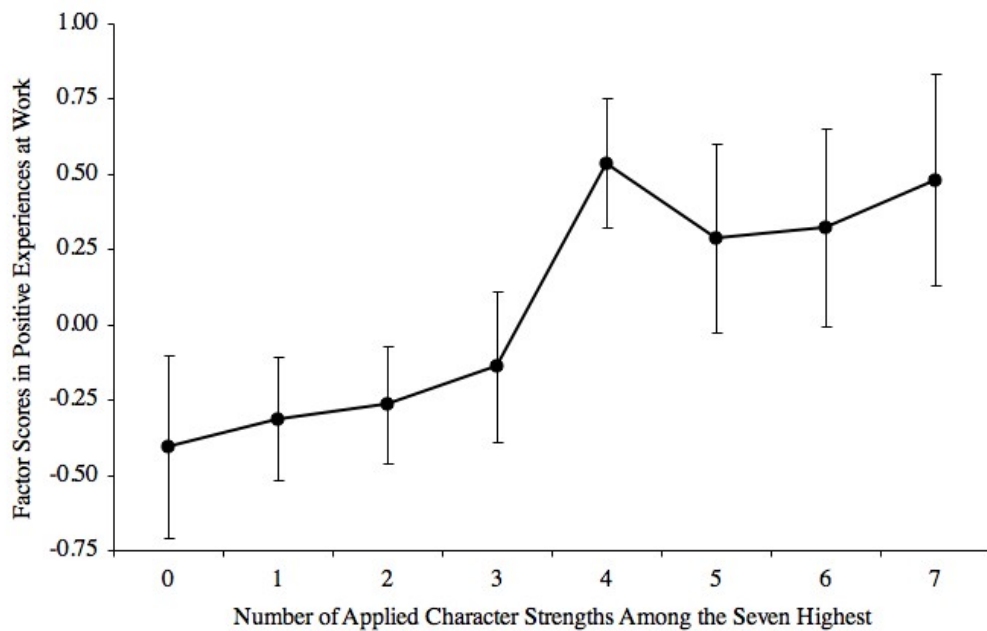
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<sup>3</sup> Ratings of the applicability of the character strengths were restructured from a content wise order (i.e., for creativity, curiosity, etc.) to a rank wise order (i.e., applicability of character on rank 1, rank 2, etc.). The character strengths at rank 1, rank 2, etc. up to rank 24 differs individually. Ranks were derived from the VIA-IS scores that were rank ordered within each individual.

applicability that is at least rated as “often”) and if (b) the VIA-IS score (self-rating) was 3.5 or higher (i.e., this is equal to possessing a character strength at least slightly).

A univariate ANCOVA was performed with the number of character strengths that are applicable at work as independent variable (8 groups: 0 to 7 strengths applicable) and the factor scores of positive experiences at work as dependent variable. Age, gender, and education were used as covariates. Repeated contrasts were utilized testing whether neighboured groups differed.

The ANCOVA indicated a large effect (Cohen, 1988) of the number of strengths applied at work on positive experiences at work,  $F(7, 110) = 2.36, p = .029$ , partial  $\eta^2 = .142$ . Figure 1 shows how the degree of positive experiences varied as a function of number of the applied character strengths among the seven highest.



*Figure 1.* Average factor scores in positive experiences at work ( $\pm SE$ ) as a function of number of the seven highest character strengths applied at work. Group sample sizes were  $n_0 = 10$ ,  $n_1 = 21$ ,  $n_2 = 23$ ,  $n_3 = 14$ ,  $n_4 = 19$ ,  $n_5 = 9$ ,  $n_6 = 8$ , and  $n_7 = 7$ .

Figure 1 shows that the group means in the factor scores in positive experiences at work ranged from -.41 to .54 when applying none to seven of the highest strengths, which was a range equivalent to nearly one standard deviation. Moreover, there was a strong increase of positive experiences in the amount of more than 2/3 of a standard deviation when applying four instead of three of the highest strengths. Repeated contrasts revealed that using four instead of three strengths significantly increased positive experiences at work ( $p = .045$ ). The repeated comparisons between all other neighbored groups failed to be significant. Group sizes dropped for the groups applying five to seven strengths, indicating that the application of five, six or seven signature strength was relatively rare.

### **Number of Applied Signature Strengths and Calling**

The application of at least four signature strengths defined a good strengths-related congruence between an individual and the workplace, as this went along with higher degrees of positive experiences at work. To find out whether this number of applied strengths at work was crucial for callings as well, a univariate ANCOVA with the same specifications as the one computed before was performed but with the WLQ calling score as dependent variable. The number of applied signature strengths was the independent variable (8 groups: 0 to 7 strengths applicable); age, gender, and education entered the analysis as covariates. Again, the ANCOVA indicated a large effect (Cohen, 1988) of the group membership on the calling ratings,  $F(7, 110) = 3.28, p < .01$ , partial  $\eta^2 = .187$ . A planned comparison contrasting the groups of “poor congruence” (0 to 3 strengths applied) vs. “good congruence” (4 to 7 strengths applied) yielded a significant difference between those applying 0-3 and those applying 4-7 signature strengths,  $F(1, 110) = 11.11, p < .01$ . The group that applied up to three strengths did not perceive their jobs as a calling ( $M = 2.27$ ; 95% confidence interval ranging from 2.03 to 2.50; below the scale midpoint of 2.5). The group that applied four to



seven strengths clearly indicated seeing their job as a calling ( $M = 3.05$ ; 95% confidence interval ranging from 2.76 to 3.34; above the scale midpoint of 2.5).<sup>4</sup>

### **Number of Applied Signature Strengths, Positive Experiences, and Calling**

Two steps of analysis were conducted to explore whether positive experiences at work mediate the association between the number of applied signature strengths at work and calling. *Firstly*, the zero-order correlations between the number of applied strengths among the seven highest, the factor positive experiences at work, and calling were computed. Correlation coefficients were .32 between the number of applied strengths and positive experiences, .36 between the number of applied strengths and calling, and .43 between the positive experiences and calling (all  $p < .001$ )<sup>5</sup>. *Secondly*, a path analysis was conducted (using AMOS 17; Arbuckle, 2008) to investigate whether the direct relationship between the number of applied strengths and calling decreased when the factor positive experiences at work was considered as a mediator. The independent variable was the number of strengths among the seven highest applied at work (range: 0 to 7), mediator was the factor of positive experiences at work, and the outcome variable was calling (see Figure 2).

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<sup>4</sup> Peterson, Park, Hall, and Seligman (2009) showed that zest is the character strength of the VIA classification that plays the most important role for calling. The question arises how the relationship between the number of applied signature strengths and calling changes when zest is controlled for. We highlighted that the application of signature strengths is important for calling irrespective of the strengths' content. Therefore, if the results remained the same when controlling for zest, it would be a support for this statement. Analyses of the data were conducted with two different changes in data analyses to check for the influence of zest on the results. These were that (a) zest was not included when computing the number of applied strengths at work and (b) zest entered the analysis as covariate in an ANCOVA (UV = number of applied signature strengths; AV = calling rating). The results remained the same (version a:  $F[7, 110] = 2.13$ ,  $p = .048$ , partial  $\eta^2 = .130$ ; version b:  $F[7, 110] = 2.60$ ,  $p = .017$ , partial  $\eta^2 = .155$ ). Again, planned comparisons (all  $p < .001$ ) showed that especially those employees applying four to seven of their signature strengths see their work as a calling compared to those applying none to three strengths at work irrespective of the influence of zest (0-3 strengths vs. 4-7 strengths: [version a]  $M = 2.31$  vs. 3.05; [version b]  $M = 2.32$  vs.  $M = 2.95$ ).

<sup>5</sup> The calling orientation was very similarly related to each of the positive experiences at work with correlation coefficients of .31, .34, .34, and .35 with meaning at work, engagement at work, job satisfaction, and pleasure at work, respectively (all  $p < .001$ ).

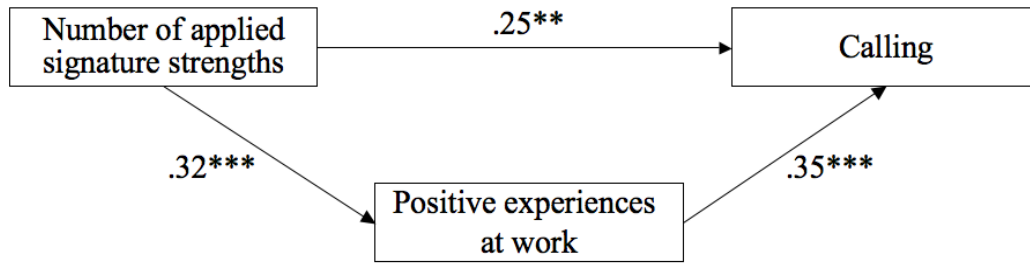


Figure 2. Path model of the effect of the number of signature strengths applied at work on calling, which is partially mediated by positive experiences at work. \*\* $p < .01$ . \*\*\* $p < .001$ .

Figure 2 shows that the direct relationship between the number of applied signature strengths and calling dropped from .36 to .25 when considering positive experiences at work as mediator. This indicated, that this relationship was partially mediated by the amount of positive experiences at work. Therefore, the number of applied signature strengths at work seemed to influence a calling orientation in two ways: directly, but also indirectly by fostering positive experiences. The indirect effect was .11 ( $p < .001$ ; with a bias corrected 95% confidence interval ranging from .05 to .20 using 5000 bootstrap samples).

### Discussion

The present study indicates that calling is a function of the congruence between an individual's character strengths and those demanded at the workplace, as well as of the degree of positive experiences at work. These results are even more meaningful as they were corrected for common method bias due to additional involvement of peer-ratings (cf., Doty & Glick, 1998).

Associations between applicability of strengths and positive experiences at work increased with the centrality of the strengths for the individual (irrespective of the nature of the strengths), which is in line with previous research (Harzer & Ruch, in press). Moreover, it seems to be critical to apply at least four signature strengths for positive experiences at work

and calling. Whereas those participants applying none to three strengths among the seven highest had a relatively low amount of positive experiences at work (i.e., below average), the ones applying four and more strengths described higher degrees of positive experiences at work (i.e., above average). This is in line with the results found by Harzer and Ruch (in press). Moreover, only those applying four and more signature strengths indicated seeing their jobs as a calling. Even when controlling for zest as the most important predictor for calling among the 24 character strengths of the VIA classification, the number of applied signature strengths at work was related to calling. Hence, character strengths matter within the work context irrespective of the content but respective to their centrality for the individual.

Calling is very desirable due to its positive outcomes (for both, employers and employees) such as less frequent turnover (i.e., more years in current position), less frequent absence days, and higher income (Wrzesniewski et al., 1997). Hence, it is of great interest to foster calling in employees. It therefore needs to be considered how this can be done. The present study indicated that the congruence between an individual's character strengths and the ones demanded at the workplace plays an important role. The mediation analysis indicated that this congruence even has two modes of action on calling – direct and indirect through the enhancement of positive experiences. Such a direct link has already been noted previously (e.g., Dobrow, 2004; Novak, 1996; Weiss et al., 2004). However, the present study is the first one showing the role of strengths-related congruence between a person and a job for a calling orientation. Additionally, a good congruence (i.e., at least four applied signature strengths at work) is indirectly related to calling as it relates to positive experiences at work, which in turn relate to calling. Consequently, employers or human resource managers would need to enhance the application of individual signature strengths between the employees and their workplaces to increase positive experiences and calling.

Furthermore, the present study can be seen as additional validation of the concept of signature strengths (cf., Peterson & Seligman, 2004). Character strengths do differ in their importance depending on their centrality for an individual (and not only with respect to their content-related nature). Hence, it is not only important to foster the character strengths known to be generally strongly related to life satisfaction and positive emotions in order to obtain a fulfilling life (e.g., Güsewell & Ruch, 2012b; Peterson, Ruch, Beermann, Park, & Seligman, 2007; Ruch et al., 2010). It is also relevant to cultivate and exercise the signature strengths (also see Seligman, Steen, Park, & Peterson, 2005); with respect to the results of the present study at least four of them. However, that does not mean each person owns four signature strengths. This number results from analyzing data across but not within participants. There will be individual differences in the number of signature strengths. It might be of interest to further study these differences and their role for positive experiences. Is it the same to apply four out of four or seven out of seven or four out of seven signature strengths? Do have the individuals with more signature strengths advantages in obtaining a fulfilling life? How do the individual differences in the number of signature strengths develop? Due to the fact that character strengths are defined as malleable and dependent on life experiences (cf., Peterson & Seligman, 2004) this might be a function of the frequency of opportunities to show strengths-related behavior. This may be further studied.

Limitations of the present study give directions for future research. The findings need further validation through intervention studies as cross-sectional data was reported in the present study and consequently, causality could not be inferred. This paper examined, whether the application of individual signature strengths, positive experiences at work, and calling are robustly associated. Further research utilizing longitudinal design or intervention studies would be needed to prove the assumed causality. Additionally, intervention studies might contrast the effects of increasing the application of one vs. two vs. three vs. four vs.

five vs. six vs. seven strengths. Within this context, it would also be interesting to see whether there is a “too little” or “too much” of exercised signature strengths resulting in strain or boredom, as found for other positive interventions (Lyubomirsky, Sheldon, & Schkade, 2005).

Furthermore, the sample of the study was very highly educated and therefore, not representative for the employee population. It will be necessary to study a more representative sample or even employees in non-professional work to further examine replicability and generalizability of results. However, education is only slightly related to the character strengths of wisdom and knowledge as measured with the VIA-IS (cf., Ruch et al., 2010) and their applicability as measured with the ACS-RS (Harzer & Ruch, in press). Therefore, the results presented here might not be affected by a different sampling. Nevertheless, non-professional work compared to professional work is characterized by higher degrees of formalization and less variety in the tasks (Mathieu & Hamel, 1989; Morgenson & Humphrey, 2006). Professional work in turn is more complex with higher psychological demands and decision latitude (Karasek, Brisson, Kawakami, Houtman, Bongers, & Amick, 1998). A perception of “good congruency” followed by positive experiences and a sense of calling might be facilitated in a non-professional work more easily – with less than four applied signature strengths.

Furthermore, the notion that at least four applied signature strengths at work relates to the character strengths defined within the VIA classification. Utilizing other conceptualization of human strengths or themes of talent like the ones defined in the StrengthsFinder (Rath, 2007) may lead to another conclusion. These themes are defined as being especially relevant to excellence in the workplace and are more specific than the character strengths defined within the VIA classification. For example, themes like empathy and positivity may reflect the broader character strengths kindness; command and developer

my reflect leadership. There are studies showing that the application of strengths as measured by the StrengthsFinder results in more productive work, less employee turnover, and higher work engagement (for an overview see for example Hodges & Asplund, 2010). It might be interesting to do a similar study to the one presented here with the strengths (i.e., themes of talent) measured by the StrengthsFinder. Will there be a different number of applied strengths that is crucial for a high level of positive experiences and a calling orientation? Due to the more specific conceptual level of the themes defined in the StrengthsFinder one might expect, for example, that more applied strengths are needed to cover the broad range of tasks and experiences at work for a perception of “good congruency”.

However, there might not only be differences in the critical number of applied signature strengths for positive experiences and calling between professions or strengths conceptualizations but also with respect to specific situations. It might be of interest to collect longitudinal data to evaluate cross-situational consistency of strengths. Depending on factors such as work stress, complexity of the current work tasks, and whether other people are involved, at one moment two strengths are optimal and at another five strengths are optimal.<sup>6</sup>

Additionally, future studies might assess positive experiences at work with scales comprised of several items. Consequently, it will also be possible to investigate them individually now that we know they matter with respect to a calling orientation. It may be examined whether the positive experiences at work studied here are equally important for the development of a calling or whether some are more important than others.

Overall, the present study provides information on how to “organize” a workplace in order to set up a positive institution. Positive institutions are those, which enable the development of positive traits like the character strengths which in turn foster positive experiences (Peterson, 2006). In the light of the present paper, a positive workplace is one

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<sup>6</sup> The authors would like to thank one of the anonymous reviewers for this comment.

that fosters the individuals' signature strengths (i.e., allows for their application) and consequently facilitates positive experiences and calling.

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## General Discussion

The prime aim of the present thesis was to get further understanding in the role of character strengths at the workplace with the focus on their relations with positive behavior and positive experiences at work. In the thesis, *positive behavior* at work was studied with respect to four different dimensions of job performance, namely task performance and three dimensions of contextual performance, i.e., job dedication, interpersonal facilitation, and organizational support. Furthermore, the present thesis focused on the four *positive experiences* at work job satisfaction as well as pleasure, engagement, and meaning at work. The examination of relationships did not only consider the direct relationships (i.e., the associations across participants) of character strengths with positive behavior and positive experiences at work. Also the indirect relationships of strengths-related fit to these work-related outcomes (i.e., correlations across character strengths) have been of interest. The following sections summarize and interpret the findings of all presented studies in the three parts of the present thesis and raise strengths as well as limitations. Finally, further questions that arise from these findings and draft ideas for future research are discussed.

## Overview on Main Results and Main Conclusions

Overall, the present thesis shows insights in the role of character strengths at work relying on data derived from two samples showing impressing robust results. The thesis provides evidence, that character strengths matter at work. It shows that specific character strengths are meaningfully associated with specific dimensions of job performance (i.e., task performance and three dimensions of contextual performance job dedication, interpersonal facilitation, and organizational support). Furthermore, the thesis indicates that a character strengths-related person-job fit (here: the number of signature strengths applied at work) is associated with job performance, positive experiences at work (i.e., job satisfaction as well as pleasure, engagement, and meaning), and seeing the job as a calling. The application of at

least four signature strengths seems to be crucial for a high level of positive experiences at work and seeing a job as a calling. There was a strong increase of positive experiences at work in the amount of more than 2/3 of a standard deviation when applying four instead of three of the signature strengths. Especially the employees that applied four and more strengths clearly indicated seeing their job as a calling. Furthermore, degree of character-strengths related person-job fit even has two modes of action on calling – direct and indirect through the enhancement of positive experiences.

**Part I** presented the very first study on the relationships between the 24 character strengths included in the VIA classification (Peterson & Seligman, 2004) and four dimensions of job performance (i.e., task performance and three dimensions of contextual performance: job dedication, interpersonal facilitation, and organizational support). To control for inflated correlation coefficients when solely relying on self-ratings, also supervisors were asked to rate the job performance of the employees participating. As expected character, indeed, was positively related to job performance. Findings were replicable across a set of two samples utilizing self- and supervisor-rated performance. Therefore, the reported associations between character strengths and the dimensions of job performance were even more meaningful as they were not due to common method variance. As hypothesized character strengths seem to influence the positive behavior at work that is recognized by the supervisors. When examining the relationships among the self-ratings in character strengths and job performance, correlation coefficients were numerically higher due to the common method variance. However, self-ratings in the variables of interest help to study the nomological network of the associations between character strengths and job performance as they provide information on the pattern of associations (cf., Luthans, Avolio, Avey, & Norman, 2007). Indeed, the pattern of relationships between character strengths and

the dimensions of job performance were very similar comparing self- and supervisor-rated job performance and conform to the expectations.

Amongst those strengths consistently associated with *task performance* were perseverance, teamwork, honesty, prudence, and self-regulation. *Job dedication* has more overlap with task performance than the other dimensions of contextual performance (Van Scotter & Motowidlo, 1996), hence task performance and job dedication share correlates among the strengths (i.e., perseverance, teamwork, honesty, prudence, self-regulation). However, bravery, curiosity, and love of learning were unique to job dedication.

*Interpersonal facilitation* was associated with teamwork, social intelligence, leadership, and fairness. *Organizational support* was related to all of the character strengths except six (i.e., forgiveness, modesty, appreciation of beauty and excellence, gratitude, humor, and religiousness) across all studies and samples. The numerically highest associations were with perseverance, kindness, teamwork, and self-regulation.

Character strengths as personality variables had a numerically stronger overlap with contextual performance dimensions than with task performance. Nevertheless, the character strengths showed consistent associations to task performance as well. This is in line with the theory of individual differences in task and contextual performance by Motowidlo, Borman, and Schmit (1997). They stipulated personality variables to be stronger associated with contextual performance compared to task performance, but to be related to task performance as well. Among the dimensions of contextual performance, organizational support was the one most often co-occurring with the character strengths across all studies and samples. This dimension of job performance entails less performance related issues like enhancing own or others' accomplishments. It is much more related to moral behavior like a positive representation of the organization one is employed at and includes promoting it, showing

loyalty by staying with it despite hardship, and complying with organizational rules (Borman, Penner, Allen, & Motowidlo, 2001).

Taken the findings from Part I and the results from the previously published papers describing research utilizing the VIA-IS in the work-context an impressive picture arises. All except two character strengths (i.e., modesty and beauty) were related to work-related outcomes like job performance, leadership variables (e.g., number of supervised employees, being a leader or not), calling orientation, and/or job satisfaction. This clearly shows the relevance of the character strengths within the work-context.

Finally, Part I showed that the character strengths-related person-job fit goes along with job performance. The participants who rated their signature strengths as useful at work seemed to be the better performer. However, for task performance the results could not be consistently replicated across the samples and sources of performance ratings presented in Part I. This might have been in parts due to the single item measurement of the usefulness or applicability ratings for each of the character strengths. Hence, future research should utilize more reliable and theory-driven measurements for the assessment of the applicability of character strengths at work (no single item measurements that acknowledge the knowledge about influences on actual behavior). Such a measure was introduced in Part II.

**Part II** described the theory-driven development and hypotheses-driven analyses of a multi-item measure for the assessment of the applicability of 24 character strengths (Applicability of Character Strengths Rating Scales; ACS-RS). The reliability and validity of the ACS-RS had been presented prior to its utilization for research on character strengths-related person-job fit. The combination of the ACS-RS with the one assessing the possession of character strengths as positive traits (VIA-IS; Peterson, Park, & Seligman, 2005) gives a new, strengths-related approach for the investigation of person-job fit.



Firstly, this allowed analyzing the relationship between the applicability of strengths (as measured with the ACS-RS) and work-related outcomes depending on the strengths rank. The latter can be derived from rank ordering the strengths scores within individuals (as measured with the VIA-IS) and describes the centrality of the strengths within individuals irrespective of the nature of the strengths. Correlations between applicability of strengths and positive experiences at work increased with the centrality of the strengths. Therefore, Part I provided strong empirical evidence showing that there actually might be something like signature strengths. Independent from content, character strengths differed in their importance. Especially, the seven highest strengths (rank 1 to 7) showed the numerically highest relations with positive experiences at work.

Secondly and consequently, a person-job fit needs to consider the application of the seven highest character strengths at work as they represent the signature strengths of an individual. A signature strength was only defined as being applied, if (a) the ACS-RS score was 4 or higher (i.e., this is equal to an applicability that is at least rated as “often”) and if (b) the VIA-IS score was 3.5 or higher (i.e., this is equal to possessing a character strength at least slightly). The resulting score varies between 0 and 7 and operationalized the degree of fit between a person and his/her working environment. Actually, the amount of positive experiences at work increased with the number of signature strengths that could be applied. There seemed to be a “satiation point” around four strengths what is within the range of the number of signature strengths (i.e., between three and seven) stipulated by Peterson and Seligman (2004). This means that the impact any more applied signature strength in addition to four was less strong (i.e., there was a stronger increase in positive experiences at work when applying four instead of three signature strengths compared to the increase when applying five instead of four signature strengths).

**Part III** was a *replication of Part II* as peer-ratings were used to assess the applicability of character strengths at work. A replication of the findings derived in Part II using peer-ratings provided further validation, as the findings in Part II regarding the character strengths-related person-job fit could in parts be due to methodological reasons – both, possession and applicability of character strengths as well as the positive experiences at work were measured by means of self-ratings. Utilizing the combination of self- and peer-rating reduced the influence of common method biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Hence, artificially inflated relationships due to common rater and measurement context effects between the variables investigated were reduced. Interestingly, Part III indicated that there seems to be a critical number of four applied signature strengths at work for positive experiences at work rather than a satiation point. When applying none to three signature strengths at work, there was no increase in positive experiences. A significant higher level in positive experiences at work was observed for those participants applying four and more of their signature strengths at work without differing significantly from each other.

Furthermore, Part III was an *extension of Part II* as the relations between strengths-related person-job fit and calling was studied as well. As expected, results indicated that the fit between an individual's character strengths and the ones demanded at the workplace also plays an important role for seeing one's job as a calling. A mediation analysis showed that the degree of strengths-related person-job fit even has two modes of action on calling – direct and indirect through the enhancement of positive experiences. The direct link has already been noted previously (e.g., Dobrow, 2004; Novak, 1996; Weiss, Skelley, Haughey, & Hall, 2004). However, as shown in Part III there might be a more complex mechanism of action as well, because a good fit seems to foster positive experiences at work, which in turn facilitate calling.

**Strengths and Limitations**

**General comments.** The results presented here were not only based on single studies or single samples but have been replicated across different samples and sources of information (except the result referring to calling). Hence, the findings reported in the present thesis might not have emerged by coincidence, but seem to reflect true relationships. Despite the implicit assumption that positive experiences and positive behavior at work are the result of character strengths, causality cannot be investigated in the present thesis due to the cross-sectional designs of the studies reported here. This thesis showed that character strengths are robustly associated with positive behavior at work across people and how the strengths-related person-job fit is related to positive experiences and positive behavior at work. Further research utilizing longitudinal, experimental or intervention designs are needed to prove assumed causality that character strengths and the application of signature strengths lead to positive behavior and positive experiences at work.

**Part I.** Strengths-related person-job fit did not correlate with task performance as rated by the supervisors. This may be (a) due to the variance restriction and ceiling effect in the supervisor-ratings and (b) because of the single-item measurements of the usefulness of the character strengths at work. Hence, it will be necessary to check for the influence of those methodological reasons by utilizing a more reliable measure of environmental influences on character strengths as developed in Part II. Furthermore, recruitment of samples needs to be changed to enable less restricted ratings in task performance. This might be due to the fact, that advertisement informing about the study addressed employees rather than supervisors. Therefore, employees needed to ask their supervisors whether they would be willing to participate as well. Only employees working well seemed to have asked their supervisors to judge their job performance. Hence, it will be of interest to study whole departments or teams from different occupations, where all employees are invited to participate and do not need to

ask their supervisors for their ratings. The way of acquisition might be changed by means of that the team leaders will be the targets of advertisements to gain them for a study. The team leaders then will invite all team members. This might help reducing range restrictions and ceiling effects. Nevertheless, it will be necessary to make sure that not only the “best practice” teams feel addressed by the advertisements.

To get a general overview on how character strengths relate to positive behavior at work, mixed samples of employees from various occupations seem to be adequate for research. Nevertheless, nothing is known right now about job-specific influences. As task performance is considered being job-specific (Katz, 1964), one might expect to find job-specific strengths on top of those found in the mixed samples as being related to task performance. For example, the character strengths of the virtue humanity were especially related to satisfaction with work in jobs that explicitly involve other people like teaching or sales (Peterson & Park, 2006). Those character strengths also might be important for task performance in teaching or sales people and therefore, will be related to ratings of task performance in such groups of employees. As contextual performance is not job-specific (Borman & Motowidlo, 1993), the character strengths should be similarly related to the dimensions of contextual performance across different job groups. Nevertheless, one might expect differences in the associations between character strengths of humanity or justice and contextual performance in employees working in a team versus those working alone at home without any or rare contact to colleagues.

Numerous meta-analyses have shown the positive relationship between intelligence (i.e., general mental abilities or synonym wordings like IQ, *g*, or general cognitive abilities) and job performance (correlations ranged between .40 and .60). This finding could be found in various samples from America (Schmidt & Hunter, 1998), Europe (Salgado, Anderson, Moscoso, Bertua, de Fruyt, & Rolland, 2003), and German speaking countries (Hülsheger,

Maier, & Stumpp, 2007; Kramer, 2009). There has also been found a significant relationship between contextual performance und intelligence up to  $r = .35$  (Côté & Miners, 2006; Motowidlo & Van Scotter, 1994). Hence, the role of intelligence for job performance needs to be considered when studying the relationships between character strengths and the dimensions of job performance. Character strengths only slightly correlate with intelligence (Buschor, Proyer, & Ruch, 2011) as correlation coefficients of mean scores of character strengths and intelligence ranged between  $r = -.23$  and  $r = .13$  (median =  $-.01$  and  $-.02$  for two different measures of general mental abilities), and mainly were smaller than or equal to  $|.10|$  (i.e., 18 out 24). Correlation coefficients of norm scores in character strengths and intelligence (corrected for gender and age) ranged between  $r = -.10$  and  $r = .13$  (median =  $.03$ ). Therefore, character strengths are expected to still correlate with job performance when general mental abilities are controlled. Nevertheless, this needs to be further studied. A measure for general mental abilities (or g) will be an appropriate measure for the assessment as it has been shown that especially the one part intelligence test tasks share (i.e., g) with each other is “responsible for the prediction of job [...] performance” (Schmidt, 2002, p. 189). Factors specific to the aptitudes seem to be negligible (Schmidt, 2002).

**Part II and III.** The combination of the ACS-RS measuring the applicability of character strengths at work with the VIA-IS (Peterson et al., 2005) assessing the possession of character strengths as positive traits gives a new approach for the investigation of person-environment fit. The reliability of the ACS-RS has been demonstrated by means of internal consistency and inter-rater agreement. The measure is content-valid as it was developed theory-driven. Further information on its validity came from the examination of four theory-driven hypotheses. The ACS-RS was sensitive regarding (a) the applicability of character strengths in private vs. work life, and (b) the applicability of tonic vs. phasic strengths.

Furthermore, (c) differential enabling or disabling situational conditions regarding the character strengths at work compared to private life, and (d) positive relationships between the possession and applicability of character strengths were found as expected.

The question arises whether there are any characteristics of the sample that enabled the relationship between character strengths-related person-job fit and calling. *Firstly*, one might think of percentage of employment, as a job needs to be an important part of life to be considered as worth for identifying with. Someone working part-time with a percentage of employment of 20% (one day a week) might not identify with his/her job like someone working full-time. The participants studied within the context of the present thesis were employed to a minimum of 50% due to the recruitment strategy highlighting the precondition of having at least a percentage of employment of 50%. This might have enabled the finding presented in Part II and III. This needs to be further studied, as there were not enough participants with less than 50% of employment in the data to study the role of percentage of employment.

*Secondly*, the duration of being employed in a specific job or at a specific employer might play a role here as well. According to Hall and Chandler (2005) it is necessary to reach a certain level of knowledge to master the job task what in turn enables subjective success like seeing the job as a calling. They refer to a model from Hall (1993) stipulating that a career is a succession of learning cycles and career transitions and that at least a time period of two years seems to be necessary to reach a level of mastery. As a calling orientation and a job orientation seem to be on one continuum (Wrzesniewski, McCauley, Rozin, & Schwartz, 1997), a question also might be whether those two circumstances also prevent people from having a job orientation. Seeing one's work as a job is related with lower scores in social status and years in one position as well as higher scores in absent days (Wrzesniewski et al., 1997). These correlates are clearly not gainful for both, employees and employers.

*Thirdly*, zest plays an important role for calling as highlighted by Peterson, Park, Hall, and Seligman (2009). With means ranging from 3.47 to 3.70 (cf., Part I to Part III and Ruch, Proyer, Harzer, Park, Peterson & Seligman, 2010) zest relatively often occurs in individuals. Please note, that the cut-off value for possessing a character strength utilized in the present thesis was 3.5 (VIA-IS score). That means, that approx. 50% of the participants do possess zest. The question arises how the relationship between character strengths-related fit and calling changes when zest is controlled for. The line of argument was that strengths are important for positive experiences irrespective of their content. It would support this line of argument, if the results remained the same when zest has been controlled for. Reanalyses of the data from Part II and III were conducted with two different changes in data analyses to check for the influence of zest on the results. These were that (a) zest was not included when computing the person-job fit (i.e., number of applied strengths at work) and (b) zest entered the analysis as covariate in an ANCOVA (UV = applying none to three vs. four to seven strengths at work; AV = calling rating). These reanalyses showed that results remained the same. That means that especially those employees applying four to seven of their signature strengths see their work as a calling compared to those applying none to three strengths at work irrespective of the influence of zest.

### **Implications for Research and Practice**

**Implications for basic research.** All parts of the present thesis highlighted the importance of applying one's highest character strengths at work. This provides strong empirical evidence showing that there actually might be something like signature strengths. Independent from their content, character strengths differ in their importance. Actually, the amount of positive experiences at work increased with the number of signature strengths that could be applied. In Part II there seemed to be a "satiation point" around four strengths what is within the range of the number of signature strengths (i.e., between three and seven)

stipulated by Peterson and Seligman (2004). However, not exclusively relying on self-ratings Part III indicated the existence of a critical number of applied signature strengths namely four and more for a high level of positive experiences. Those differences might be due to the differences in the methods as Part II utilized self-ratings and Part III utilized a combination of self- and peer-ratings by co-workers. Both studies indicated that at least four signature strengths should be applied at work for a high level of positive experiences.

This result from cross-sectional survey data seem very reasonable as Peterson and Seligman (2004) postulated individuals have up to seven signature strengths. The critical number of at least four applied signature strengths at work indicates that the majority of the signature strengths need to be applied at work for a high impact on positive experiences at work. This finding might have been influenced by the fact that people tend to choose jobs suiting their personality (cf., Part II and Caspi & Herbener, 1990). Therefore, to further validate this critical number, the strengths-related person-job fit should be varied experimentally. This can be done in different ways. For example, several very different jobs are preselected (e.g., jobs in teams vs. alone, technical jobs vs. social jobs). The strengths-related demands are previously measured by ratings in the ACS-RS of employees in the jobs of interest. A mixed sample of employees would rate the degree of positive experiences they would expect to experience in these different jobs presented to them, for example, via detailed job descriptions or video clips showing the regular job tasks. The strengths-related person-job fit for each of the different jobs presented can be computed by the self-ratings in the VIA-IS (Peterson et al., 2005) and previously measured ratings in the ACS-RS of employees in the jobs of interest. Another much more complex yet more sophisticated procedure would be to have up to eight predefined experimental groups. A lot of participants fill in the VIA-IS in a pretest and those are invited to rate their positive experiences regarding a job (or two to control for job specificity) of interest who have none, one, two, three, four,



five, six, and seven of their highest seven character strengths fitting. Analyzes regarding the number of applied strengths at work and their role for positive experiences at work and calling remain the same as in Part II and III. A replication of the critical number of strengths applied at work would further validate the findings presented in Part II and III of the present thesis.

However, that does naturally not mean that each person owns four signature strengths. Individual differences in the number of signature strengths are expected. Peterson and Seligman (2004) assumed that signature strengths are characterized by ten criteria (e.g., a sense of ownership, a feeling of excitement while using it, and an intrinsic motivation to use it). However, this has not been further studied yet. These criteria would need to be considered in following studies investigating individual differences in the number of signature strengths. The following questions might be addressed in future basic research: Are all these criteria necessary for the definition of signature strengths within an individual? How many signature strengths can be found within individuals (3-7 as assumed by Peterson and Seligman, 2004, or 2-5 as assumed by Peterson, 2006a)? Are there any individual differences in the number of signature strengths? Where do those differences come from (e.g., kind and number of life experiences, parenting style)?

To be able to answer those questions it seems to be necessary to construct a questionnaire asking for the extent to which the 24 character strengths fulfill the ten criteria. Such a questionnaire might provide a short description for each of the character strengths based on their definitions (Peterson & Seligman, 2004) and participants rate the amount of agreement for each of the criteria for each of the character strengths. The combination of the answers in the VIA-IS with the new measure asking for the criteria for signature strengths would then allow for the examination of the extent to which each of the individual's character strengths (sorted by rank) fulfill each of the criteria (rank x criteria matrix). Across people,

this matrix might give hints for the number of signature strengths across people as the degree of fulfillment of the criteria might drop with the rank of the character strengths. Furthermore, it might provide information of how useful each of the criteria is as the degree of a fulfillment might differ across the criteria. Within individuals, such a matrix shows how many character strengths fulfill how many criteria for a signature strength. This might provide information on the individual number of signature strengths and how individuals differ from each other in the number of signature strengths.

Additionally, very little is known about the development of character strengths or signature strengths in adulthood (and youth). This is a bit surprising as character strengths are defined as modifiable individual differences that depend on the life circumstances (Peterson & Seligman, 2004). Direct evidence for the variability, for example from intervention studies, was not published until now except the doctoral dissertation by Rashid (2003) and the paper by Namdari, Molavi, Malekpour, and Kalantari (2009). However, both studies investigated very small samples of psychology students (Rashid, 2003;  $n = 30$  and  $35$  in the control and experimental group, respectively) and clients with chronic depression (Namdari et al., 2009;  $n = 40$  in two experimental and control groups). To the knowledge of the present author several studies have been done and are currently prepared for publishing. Indirect evidence comes from cross-sectional research addressing recovery from illness (Peterson, Park, & Seligman, 2006) and posttraumatic growths (Peterson, Park, Pole, D'Andrea, & Seligman, 2008; Peterson & Seligman, 2003). For example, this research yielded differences between people having recovered from illness compared to those who did not recover. Furthermore, from first evidence out of the behavioral genetics research (Steger, Hicks, Kashdan, Krueger, & Bouchard, 2007) it is known that genetic as well as environmental effects on character strengths exist. To sum up, 14% to 59% (median = 42%) and 41% to 86% (median = 59%) of the variance of character strengths was explained by genetic and environmental influences,

respectively. Nevertheless, research utilizing longitudinal designs also asking for life events (ideally with different cohorts to get an overview on age-related changes across adulthood) and intervention studies addressing the change of character strengths are needed. Results from research in this area would also assist applied research addressing, for example, the enhancement of positive behavior and positive experiences.

Relations between the character strengths and job performance turned out to be linear: the higher the degree of endorsing character strengths the higher the scores in job performance. There does not seem to be a “too much” of a strength as similarly found by Park, Peterson, and Seligman (2004) who studied the relationships between character strengths and satisfaction with life. Nevertheless, the VIA-IS might not be the measurement of choice when aiming at the investigation of “unhealthy extremes” of the character strengths. Peterson (2006b) gave an overview on the exaggeration for each of the character strengths like eccentricity for creativity and foolhardiness for bravery. It might be worth constructing a questionnaire measuring those exaggerations of the strengths. Such a measure might base on the ideas Peterson (2006b) had. Nevertheless, it should also consider ideas generated by focus groups with people from outside the university to talk about the strengths and whether there is something like a “too much” and it looks like. One might also think of utilizing the act frequency approach (Buss & Craik, 1983) to collect exaggerated strengths-related behavior.

Several questions might be addressed after the development of such a measure. For example, how the character strengths as assessed with the VIA-IS and the corresponding exaggerations relate to each other. It could be examined whether the character strengths and the corresponding exaggerations share one continuum (i.e., quantitative differences) or whether they differ on a more qualitative level. One focus also might be to study whether there is something like a “meta strength” or “meta cognition” that prevents people from

showing too much of a character strengths (i.e., to apply a character strengths in an appropriate way). For example, perspective and judgment might serve as such meta-level competencies. This perfectly fits to the idea Barry Schwartz mentioned in a TED talk in 2009: „The good news is that you don’t need to be brilliant to be wise! The bad news is that without wisdom brilliance isn’t enough! It is as likely to get you and other people into trouble as anything else!“ ([http://www.youtube.com/watch?v=lA-zdh\\_bQBo&feature=relmfu](http://www.youtube.com/watch?v=lA-zdh_bQBo&feature=relmfu); min 5:26 to min 5:45).

**Implications for applied research.** It will be necessary to conduct studies investigating the assumed causality with character strengths and strengths-related person-job fit as predictors of the work-related outcomes (i.e., positive behavior and positive experiences). Firstly, longitudinal research designs help to investigate changes over time in both groups of variables and to relate these changes to each other. Secondly, intervention studies should be designed to experimentally increase strengths-related person-job fit and to then examine changes in positive behavior and positive experiences.

Further research might also be conducted on organizational level. The present thesis provides information on how to “organize” a workplace in order to set up a positive institution. Positive institutions are those, which enable the development and display of positive traits like the character strengths which in turn foster positive experiences (Peterson, 2006a). In the light of the present thesis, a positive workplace is one that fosters the individuals’ signature strengths (i.e., allows for their application) and consequently facilitates positive experiences, calling, and job performance. A good fit between the character strengths of an employee and their applicability at work is of advantage for both, the employee and the employer (also cf., Kleinmann & Strauß, 1998). The employee feels better (higher levels of positive experiences) and improves job performance what should lead to an increase of an

organizations outcome. This causal chain needs to be studied by longitudinal and interventional studies on the level of organizations and teams.

In line with this, it will be of interest to find out how the best strengths-related intervention in terms of efficacy when changing the target variables looks like (e.g., job performance, positive experiences at work, and calling). It needs to be studied what the critical number of signature strengths is that are used in different/new ways at work (and in general) to gain the best impact on work-related (and non work-related) outcomes. The application of four signature strengths was the crucial number for positive experiences at work and calling as found in the cross-sectional research reported in Part II and III of the present thesis. Is it the same in intervention studies? Does the context play a role (private vs. work life)? What is the critical number of applied strengths in private life for positive experiences in general (e.g., orientations to happiness, satisfaction with life)? Interventions studies with the basic idea of using the signature strengths in a new way need to be conducted as this has an impact in happiness and depression (Seligman, Steen, Park, & Peterson, 2005). Will this strategy function in the work-context as well? Is there a too little (i.e., boredom) or too much (i.e., strain) of the number of signature strengths used in a new way? This can be studied by comparing intervention groups applying 1 vs. 2 vs. 3 vs. 4 vs. 5 vs. 6 vs. 7 signature strengths. It also might make a difference if all signature strengths are targeted together vs. successively (each week another one will be added). What happens with participants possessing less than 7 signature strengths? Furthermore, the optimal duration of the intervention needs to be studied, as this is critical for the effectiveness of a positive psychology intervention (Sin & Lyubomirsky, 2009). In general, longer durations (longer than 4 weeks) tended to be more effective (Sin & Lyubomirsky, 2009).

**Implications for practice.** The present thesis showed that character strengths matter in vocational environments irrespective of their content. Strengths-congruent activities at the

workplace are important for positive behavior at work (e.g., task performance, job dedication, interpersonal facilitation, and organizational support) and positive experiences at work (e.g., job satisfaction as well as experiencing pleasure, engagement, and meaning fostered by one's job). One operationalization of strengths-congruency can be the fit between the signature strengths (as positive traits) of an individual and the demands of the workplace. With the VIA-IS a reliable and valid measure for character strengths of the individual exists and the ACS-RS is a reliable and valid questionnaire for the applicability of character strengths at the workplace. The combination of both measures in career counseling would give information on the signature strengths of an individual and the degree of applicability of these strengths at work. Any discrepancies found here might be addressed in the next steps in order to reduce them (e.g., by changes in workplace design and job tasks). Furthermore, the ACS-RS (especially the ratings referring to external demands) can be utilized to conduct a requirements analysis with respect to the character strengths. When conducting job interviews or assessment centers the most required character strengths can be considered as dimensions for the selection of a candidate. Additionally, those character strengths related to the dimensions of job performances might be considered as well. Furthermore, one might think of considering the individual signature strengths for training "on the job". Despite only targeting, for example, an increase in job knowledge or job skills, the degree of application of the signature strengths could be considered as well as this might in turn foster the job performance and the positive experiences as well.

Overall, the present thesis strongly highlights the importance of character strengths in the work-context and opens a broad range of new research questions to be addressed in the future. I am looking forward to planning and conduction further studies and at least answering some of the questions.

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*Appendix A*

Table A1

*Overview on the relationships among the job performance dimensions as reported in literature*

Variables	1	2	3	4	5
Job performance (1)					
Task performance (2)	.43-.82 <sup>1</sup>				
Contextual performance (3)	.23-.67 <sup>2</sup>	.16-.67 <sup>3</sup>			
Interpersonal facilitation (4)	.11-.48 <sup>4</sup>	.04-.75 <sup>5</sup>	.06-.69 <sup>6</sup>		
Job dedication (5)	.53-.56 <sup>7</sup>	.22-.68 <sup>8</sup>	-.13-.76 <sup>9</sup>	-.17-.71 <sup>10</sup>	
Organizational support (6)	.24-.44 <sup>11</sup>	.08-.58 <sup>12</sup>	.60-.70 <sup>13</sup>	.09-.74 <sup>14</sup>	.22-.54 <sup>15</sup>

<sup>1</sup> Bachrach, Powell, Bendoly, & Richey (2006); Barksdale & Werner (2001); Motowidlo & Van Scotter (1994); Van Scotter (1994); Van Scotter & Motowidlo (1996).

<sup>2</sup> Motowidlo & Van Scotter (1994); Van Dyne & Pierce (2004).

<sup>3</sup> Edwards, Bell, Arthur, & Decuir (2008); Greenhaus, Parasuraman, & Wormley (1990); Hatrup, O'Connell, & Wingate (1998); Hatrup, Rock, & Scalia (1997); Lee, Mitchell, Sablinski, Burton, & Holtom (2004); Motowidlo & Van Scotter (1994); Piercy, Cravens, Lane, & Vorhies (2006); Puffer (1987); Poropat & Jones (2009); Van Scotter (2000).

<sup>4</sup> Bachrach et al. (2006); Barksdale & Werner (2001); Ozer (2011); Van Scotter (1994); Van Scotter & Motowidlo (1996).

<sup>5</sup> Bachrach et al. (2006); Barksdale & Werner (2001); Blickle & Kramer (in press); Carmeli & Josman (2006); Cohen & Keren (2008); Diefendorff, Brown, Kamin, & Lord (2002); Halbesleben & Bowler (2007); Piercy et al. (2006); Podsakoff, Whiting, Podsakoff, & Blume (2009); Poropat & Jones (2009); Van Scotter (2000); Van Scotter & Motowidlo (1996); Williams & Anderson (1991).

<sup>6</sup> Piercy et al. (2006); Spector, Bauer, & Fox (2010).

<sup>7</sup> Van Scotter (1994); Van Scotter & Motowidlo (1996).

<sup>8</sup> Blickle & Kramer (in press); Diefendorff et al. (2002); Fritz, Yankelevich, Zarubin, & Barger (2010); Piercy et al. (2006); Poropat & Jones (2009); Van Scotter (2000); Van Scotter & Motowidlo (1996).

<sup>9</sup> Piercy et al. (2006); Poropat & Jones (2009); Spector et al. (2010).

<sup>10</sup> Diefendorff et al. (2002); Grant (2008); Greenslade & Jimmieson (2007); Piercy et al. (2006); Poropat & Jones (2009); Spector et al. (2010); Van Scotter (2000); Van Scotter & Motowidlo (1996).

<sup>11</sup> Bachrach et al. (2006); Ozer (2011).

<sup>12</sup> Bachrach et al. (2006); Cohen & Keren (2008); Diefendorff et al. (2002); Halbesleben & Bowler (2007); Piercy et al. (2006); Podsakoff et al. (2009); Poropat & Jones (2009); Williams & Anderson (1991).

<sup>13</sup> Piercy et al. (2006); Poropat & Jones (2009).

<sup>14</sup> Bachrach et al. (2006); Cohen & Keren (2008); Diefendorff et al. (2002); Greenslade & Jimmieson (2007); Halbesleben & Bowler (2007); Podsakoff et al. (2009); Poropat & Jones (2009); Piercy et al. (2006); Smith, Organ, & Near (1983); Williams & Anderson (1991).

<sup>15</sup> Diefendorff et al. (2002); Greenslade & Jimmieson (2007); Piercy et al. (2006); Poropat & Jones (2009).

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**Ehrenwort**

Hiermit erkläre ich, dass die Dissertation von mir selbst ohne unerlaubte Beihilfe verfasst worden ist.

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Ort und Datum

Unterschrift



## Curriculum Vitae

Name: Claudia Harzer, MSc.

Date and Place of Birth: October 4 1981, Weimar/Germany, Europe

### *Education*

- 02/2012: defense of PhD thesis with the title “Positive psychology at work: The role of character strengths for positive behavior and positive experiences at the workplace” (graduation with insigni cum laude; very good)
- 09/2008 – 02/2012: PhD student, Section on Personality and Assessment, Department of Psychology, University of Zurich, head: Prof. Dr. W. Ruch
- 09/2006: diploma in psychology (graduation with honors); equal to MSc
- 10/2000 – 09/2006: studies of psychology at University of Bielefeld, Germany
- 06/2000: A levels (grade: 1.2; very good)
- 10/1993 – 06/2000: secondary school (Staatliches Gymnasium Bad Berka - Blankenhain, Schulteil Bad Berka)

### *Professional Career*

- since 10/2006: teaching and research associate, Section on Personality and Assessment, Department of Psychology, University of Zurich, head: Prof. Dr. W. Ruch
- 01/2004 – 09/2006: student assistant, Section on Industrial and Organizational Psychology, Department of Psychology, University of Bielefeld, head: Prof. Dr. W. G. Maier
- 09/2002 – 09/2006: student assistant, Section on Individual Differences, Personality Psychology and Assessment, Department of Psychology, University of Bielefeld, head: Prof. Dr. A. Angleitner

### *Internships*

- 04/2004 – 02/2005: scientific internship, Section on Individual Differences, Personality Psychology and Assessment, Department of Psychology, University of Bielefeld, head: Prof. Dr. A. Angleitner
- 09/2003 – 10/2003: neuropsychological internship, Section on Neuropsychology, Johanniter-Ordenshäusern Bad Oeynhausen, head: Dipl.-Psych. I. Lischka

### *Research Interests*

Positive Psychology (at the Workplace), Assessment of Positive Psychology Traits (Character Strengths and Virtues), Assessment of Positive Psychology Constructs (Orientations to Happiness, Meaning at Work, Calling), Personality Structure, Psychological Assessment, Assessment and Dimensionality of Job Performance

*Research Grants*

06/2011-12/2013: Suzanne and Hans Biäsch Foundation for Applied Psychology (Project Nr 2011/09; 9'256 CHF [≈ \$10'100])

12/2008-12/2010: Suzanne and Hans Biäsch Foundation for Applied Psychology (Project Nr 2008/16; 7'900 CHF [≈ \$8'600])

*External Collaborations*

03/2012-05/2012: Heinrich-Schütz School Kassel (contact: Martina Klaus, employee survey, 1'100 CHF [≈ \$1'120])

11/2011-07/2012: Swisscom (contact: René Würbler, positive psychology intervention, 3'200 CHF [≈ \$3'500])

02/2011-12/2011: Iron Trader (contact: Markus Koch, psychological assessment for traders, 5'000 CHF [≈ \$5'450])

*Honors and Awards*

2001-2002: Fellowship awarded by the German National Academic Foundation

*Professional Affiliations*

2011/12: Guest member in the Committee for Assessment of the Swiss Service Center Professional Training [Fachgruppe Diagnostik des Schweizerischen Dienstleistungszentrum Berufsbildung]

since 11/2009: European Network of Positive Psychology (ENPP), Country Representative Switzerland (since 11/2009)

since 12/2007: International Positive Psychology Association (IPPA)

since 11/2006: German Psychological Society (Deutsche Gesellschaft für Psychologie, DGPs)

since 11/2006: Section "Individual Differences, Personality Psychology and Assessment" of the German Psychological Society (Fachgruppe Differentielle Psychologie, Persönlichkeitspsychologie und Psychologische Diagnostik der Deutschen Gesellschaft für Psychologie, DGPs)

since 11/2006: Section "Methods and Evaluation" of the German Psychological Society (Fachgruppe Methoden und Evaluation der Deutschen Gesellschaft für Psychologie, DGPs)

since 11/2006: Section "Work, Organizational, and Business Psychology" of the German Psychological Association (Fachgruppe Arbeits-, Organisations- und Wirtschaftspsychologie der Deutschen Gesellschaft für Psychologie, DGPs)

*Publications*

## Articles

- Harzer, C., & Ruch, W. (2012). *Does being good make the performance at work? The role of character strengths for task performance, job dedication, interpersonal facilitation, and organizational support*. Manuscript under review.
- Harzer, C., & Ruch, W. (in press). The application of signature character strengths and positive experiences at work. *Journal of Happiness Studies*. doi:10.1007/s10902-012-9364-0
- Harzer, C., & Ruch, W. (in press). When the job is a calling: The role of applying one's signature strengths at work. *The Journal of Positive Psychology*. doi:10.1080/17439760.2012.702784
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- Ruch, W., & Harzer, C. (2010). Charakterstärken: Grundlagen, Messung, Befunde und die Relevanz für die Arbeit [Character strengths: Basics, measurement, research, and role at work]. *Punktum*, 3, 8-10.
- Ruch, W., Harzer, C., Proyer, R. T., Park, N., & Peterson, C. (2010). Ways to happiness in German-speaking countries: The adaptation of German paper-pencil and online version of the Orientations to Happiness Scale. *European Journal of Psychological Assessment*, 26, 224-231. doi:10.1027/1015-5759/a000030
- Ruch, W., Proyer, R. T., Harzer, C., Park, N., Peterson, C., & Seligman, M. E. P. (2010). Values in Action Inventory of Strengths (VIA-IS): Adaptation and validation of the German version and the development of a peer-rating form. *Journal of Individual Differences*, 31, 138-149. doi:10.1027/1614-0001/a000022

## Books

- Harzer, C. (2008). *Eltern als formelle Diagnostiker: Wie gut eignen sich Eltern als TestleiterInnen bei der Intelligenztestung ihrer Kinder?* [Parents as formal diagnosticians: To what extent are parents able to assess their children's intelligence?]. Saarbrücken, Germany: Vdm Verlag.
- Scherf, T., Holodynski, M., Buschkämper, S., Harzer, C., & Tankowski, I. A. (2002). *Bericht über die Evaluation der Lehrveranstaltungen an der Abteilung für Psychologie der Universität Bielefeld im Sommersemester 2002* [Report about the evaluation of the courses offered in the spring term 2002 at the Department of Psychology of the University of Bielefeld]. Bielefeld, Germany: University of Bielefeld.

## Book Chapters

- Ruch, W., & Harzer, C. (in press). Positive Psychologie [Positive psychology]. In K. Kaudelka, & G. Kilger, *Das Glück bei der Arbeit: Über Flow-Zustände, Arbeitszufriedenheit und das Schaffen attraktiver Arbeitsplätze*. Bielefeld, Germany: transcript-Verlag.

- Harzer, C. (2011). Charakterstärken und ihr Zusammenhang mit Berufen und Interessen [Character strengths and their relations to vocations and interests]. In D. Jungo, W. Ruch, & R. Zihlmann (Eds.), *Das VIA-IS ("Values in Action Inventory of Strengths"), ein Instrument zur Erfassung von Charakterstärken. Informationen und Interpretationshilfen für die Berufs-, Studien- und Laufbahnberatung* (2<sup>nd</sup> ed, pp. 30-40). Bern, Switzerland: SDBB Verlag.
- Harzer, C. (2011). Profile verschiedener Berufe [Character strengths profiles of different vocations]. In D. Jungo, W. Ruch, & R. Zihlmann (Eds.), *Das VIA-IS ("Values in Action Inventory of Strengths"), ein Instrument zur Erfassung von Charakterstärken. Informationen und Interpretationshilfen für die Berufs-, Studien- und Laufbahnberatung* (2<sup>nd</sup> ed, pp. 40-44). Bern, Switzerland: SDBB Verlag.
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- Harzer, C. (2008). Hinweise zu den Normen. In D. Jungo, W. Ruch, & R. Zihlmann (Eds.), *Das VIA-IS ("Values in Action Inventory of Strengths"), ein Instrument zur Erfassung von Charakterstärken. Informationen und Interpretationshilfen für die Berufs-, Studien- und Laufbahnberatung* (p. 74). Bern, Switzerland: SDBB Verlag.

#### Talks at Professional Conferences

- Harzer, C., & Ruch, W. (2012, September). *Wer gut ist, tut auch Gutes? Zum Zusammenhang von Charakterstärken und verschiedenen Dimensionen beruflicher Leistung* [Being good = doing well at work? The relationships between character strengths and different dimensions of job performance]. Paper presented at the 48<sup>th</sup> Conference of the German Psychological Society, University of Bielefeld, Bielefeld, Germany.
- Harzer, C., & Ruch, W. (2012, June). *The character strengths-related person-job fit – Theoretical background, operationalization, and first results on the role of strengths-related person-job fit*. Paper presented at the 6<sup>th</sup> European Conference on Positive Psychology (ECP), Moscow, Russia.
- Harzer, C., & Ruch, W. (2012, June). *Being good = doing well at work? The relationships between character strengths and different dimensions of job performance*. Paper presented at the 6<sup>th</sup> European Conference on Positive Psychology (ECP), Moscow, Russia.
- Harzer, C., & Ruch, W. (2012, April). *Does being good make the performance at work? The role of character strengths for task performance, job dedication, interpersonal facilitation, and organizational support*. Paper presented at the 10<sup>th</sup> Conference of the European Academy of Occupational Health Psychology, ETH Zurich, Switzerland.
- Harzer, C., & Ruch, W. (2012, April). *The role of character strengths-related person-job fit for positive experiences at work and calling*. Paper presented at the 10<sup>th</sup> Conference of

- the European Academy of Occupational Health Psychology, ETH Zurich, Zurich, Switzerland.
- Höfer, S., Harzer, C., Renn, D., Weber, M., & Ruch, W. (2011, August/September). *International Well-Being Index: Austria, Switzerland, and Germany*. Paper presented at the 11<sup>th</sup> European Conference on Psychological Assessment (ECPA2011), Riga, Latvia.
- Proyer, R. T., Ruch, W., & Harzer, C. (2009, September). *Studien zur Validität des deutschsprachigen Values in Action Inventory of Strengths (VIA-IS)* [Studies on the validity of the German version of the Values in Action Inventory of Strengths (VIA-IS)]. Paper presented at 10<sup>th</sup> Arbeitstagung der Fachgruppe Differentielle Psychologie, Persönlichkeitspsychologie und Psychologische Diagnostik, University Koblenz-Landau, Landau, Germany.
- Proyer, R. T., Ruch, W., Harzer, C., Park, N., & Peterson, C. (2009, September). *The German version of the Orientations to Happiness Questionnaire*. Paper presented at the 10<sup>th</sup> European Conference on Psychological Assessment, University of Ghent, Ghent, Belgium.
- Ruch, W., Proyer, R. T., Harzer, C., Park, N., Peterson, C., & Seligman, M. E. P. (2009, September). *Adaptation and validation of the German version of the Values in Action Inventory of Strengths (VIA-IS) and the development of a peer-rating form*. Paper presented at the 10<sup>th</sup> European Conference on Psychological Assessment, University of Ghent, Ghent, Belgium.
- Ruch, W., Proyer, R. T., Harzer, C., Peterson, C., Park, N., & Seligman, M. E. P. (2009, September). *Erfassung von Charakterstärken: Die deutsche Fassung des Values in Action Inventory of Strengths (VIA-IS)* [The assessment of character strengths: The German version of the Values in Action Inventory of Strengths (VIA-IS)]. Paper presented at 10<sup>th</sup> Arbeitstagung der Fachgruppe Differentielle Psychologie, Persönlichkeitspsychologie und Psychologische Diagnostik, University Koblenz-Landau, Landau, Germany.
- Harzer, C., Ruch, W., Proyer, R. T., & Peterson, C. (2008, July). *Three Orientations to Happiness – The paper-pencil and the Internet version of the German adaptation of the OTH (Peterson, Park, & Seligman, 2005)*. Paper presented at the 4<sup>th</sup> European Conference on Positive Psychology (ECP), Rijeka, Croatia.
- Harzer, C., Beermann, U., Weber, M., & Ruch, W. (2008, June). *Emotion, personality, humour production, thought action repertoire, and affectivity*. Paper presented at the 8<sup>th</sup> International Summer School and Symposium on Humour and Laughter: Theory, Research and Applications, Galati, Romania.
- Harzer, C., Ruch, W., Proyer, R., & Peterson, C. (2007, September). *Three Orientations to Happiness - The German adaptation of the OTH (Peterson, Park, & Seligman, 2005)*. Paper presented at the 10<sup>th</sup> Congress of the Swiss Society of Psychology, University of Zurich, Zurich, Switzerland.

#### Poster Presentations at Professional Conferences

- Harzer, C., & Steger, M. F. (2012, September). *Sinnerleben am Arbeitsplatz: Zur deutschen Adaptation des Work and Meaning Inventory* [Meaning at work: The German adaptation of the Work and Meaning Inventory]. Poster session presented at the 48<sup>th</sup> Conference of the German Psychological Society, University of Bielefeld, Bielefeld, Germany.

- Harzer, C. (2012, June). *The German adaptation of the Calling Scale (Dobrow & Tosti-Kharas, 2011)*. Poster session presented at the 6<sup>th</sup> European Conference on Positive Psychology (ECP), Moscow, Russia.
- Harzer, C., & Steger, M. F. (2012, June). *Meaning at work: The German adaptation of the Work and Meaning Inventory (WAMI; Steger, Dik, & Duffy, in press)*. Poster session presented at the 6<sup>th</sup> European Conference on Positive Psychology (ECP), Moscow, Russia.
- Harzer, C., & Ruch, W. (2012, June). *The Applicability of Character Strengths Rating Scales (ACS-RS)*. Poster session presented at the 6<sup>th</sup> European Conference on Positive Psychology (ECP), Moscow, Russia.
- Harzer, C., & Ruch, W. (2012, May). *Your strengths are calling: Relationships between the application of signature strengths and positive experiences at work as well as calling*. Poster session presented at the 8<sup>th</sup> LiMaDoKo of the Department of Psychology at the University of Zurich, Zurich, Switzerland.
- Gehlhar, M., Hauser, I., Harzer, C., & Ruch, W. (2012, May). *Your strengths are calling: Eine Interventionsstudie zur Anwendung von Charakterstärken bei der Arbeit* [Your strengths are calling: An intervention study on the application of signature strengths at work]. Poster session presented at the 8<sup>th</sup> LiMaDoKo of the Department of Psychology at the University of Zurich, Zurich, Switzerland.
- Harzer, C., & Ruch, W. (2011, May). *Character strengths and the role of strengths-based person-work environment fit for positive experiences*. Poster session presented at the 7<sup>th</sup> LiMaDoKo of the Department of Psychology at the University of Zurich, Zurich, Switzerland.
- Höhn, B., Harzer, C., & Ruch, W. (2011, May). *Charakterstärken und berufliche Leistung: Zum Zusammenhang von Charakterstärken und selbstberichteter bzw. durch Vorgesetzte eingeschätzter aufgaben- und kontextbezogener Leistung* [Character strengths and job performance: The relationships between character strengths and self- as well as supervisor-rated task and contextual performance]. Poster session presented at the 7<sup>th</sup> LiMaDoKo of the Department of Psychology at the University of Zurich, Zurich, Switzerland.
- Harzer, C., Proyer, R. T., & Ruch, W. (2010, July). *Big Five personality characteristics of gelotophobes, gelotophiles, and katagelasticians*. Poster session presented at the 10<sup>th</sup> International Summer School and Symposium of Humour and Laughter, Zurich, Switzerland.
- Auerbach, S., Flisch, R., Harzer, C., & Ruch, W. (2010, July). *“Jeer Pressure“ exists in Canada: Does it in Switzerland?* Poster session presented at the 10<sup>th</sup> International Summer School and Symposium of Humour and Laughter, Zurich, Switzerland.
- Harzer, C. (2010, May). *On the relationships between character strengths and job performance*. Poster session presented at the 6<sup>th</sup> LiMaDoKo of the Department of Psychology at the University of Zurich, Zurich, Switzerland.
- Linge-Dahl, L., Harzer, C., & Ruch, W. (2010, May). *Die Vorhersage von Arbeitszufriedenheit durch Coping und Charakterstärken* [Predicting of job satisfaction with coping and character strengths]. Poster session presented at the 6<sup>th</sup> LiMaDoKo of the Department of Psychology at the University of Zurich, Zurich, Switzerland.
- Weibel, Y., Harzer, C., & Ruch, W. (2010, May). *Situationelle Einflüsse auf Charakterstärken im Berufsleben im Zusammenhang mit Einstellungen zur Arbeit und Zufriedenheit* [Situational influences on character strengths at work and orientations towards one's work and satisfaction]. Poster session presented at the 6<sup>th</sup> LiMaDoKo of the Department of Psychology at the University of Zurich, Zurich, Switzerland.

- Auerbach, S., Flisch, R., Harzer, C., & Ruch, W. (2010, May). *“Jeer Pressure“ and Gelotophobia: How does ridiculing humor influence individual's behavior in experiments?* Poster session presented at the 6<sup>th</sup> LiMaDoKo of the Department of Psychology at the University of Zurich, Zurich, Switzerland.
- Harzer, C. (2009, September). *Trennt das VIA-IS zwischen verschiedenen Personengruppen? – Eine Validierungsstudie zum Values in Action Inventory of Strengths* [Does the VIA-IS discriminate between different groups? – A validation of the Values in Action Inventory of Strengths]. Poster session presented at the 10<sup>th</sup> Arbeitstagung der Fachgruppe Differentielle Psychologie, Persönlichkeitspsychologie und Psychologische Diagnostik, University Koblenz-Landau, Landau, Germany.
- Harzer, C. (2009, August). *Validating the German version of the Values in Action Inventory of Strengths (VIA-IS) – Does the German VIA-IS discriminate between extreme groups?* Poster session presented at the 11<sup>th</sup> Congress of the Swiss Society of Psychology, University of Neuchatel, Neuchatel, Switzerland.
- Höhn, B., Harzer, C., & Ruch, W. (2009, August). *Character strengths and satisfaction: The relationships between character strengths and satisfaction with life, and satisfaction with the studies.* Poster session presented at the 11<sup>th</sup> Congress of the Swiss Society of Psychology, University of Neuchatel, Neuchatel, Switzerland.
- Höhn, B., Peter, R., Harzer, C., & Ruch, W. (2008, September). *Charakterstärken, Intelligenz und Studienerfolg - Wie hängen Charakterstärken und Intelligenz mit Studienerfolg zusammen?* [Character strengths, intelligence, and academic success: The relationships of character strengths and intelligence with academic success]. Poster session presented at the 4<sup>th</sup> LiMaDoKo of the Department of Psychology at the University of Zurich, Zurich, Switzerland.
- Harzer, C., & Ruch, W. (2008, September). *Drei Wege zum Glück: Zur Reliabilität und Validität der deutschsprachigen Version des OTH von Peterson, Park und Seligman (2005)* [Three Orientations to Happiness: Reliability and validity of the German version of the OTH from Peterson, Park, and Seligman (2005)]. Poster session presented at the 4<sup>th</sup> LiMaDoKo of the Department of Psychology at the University of Zurich, Zurich, Switzerland.
- Harzer, C., & Ruch, W. (2008, July). *Character strengths as predictors for academic success and satisfaction with studies.* Poster session presented at the 4<sup>th</sup> European Conference on Positive Psychology (ECP), Rijeka, Croatia.
- Harzer, C., Ruch, W., Proyer, R., & Peterson, C. (2007, September). *Drei Wege zum Glück: Psychometrische Überprüfung der deutschsprachigen Version des OTH von Peterson, Park und Seligman (2005)* [Three Orientations to Happiness: Reliability and validity of the German version of the OTH from Peterson, Park, and Seligman (2005)]. Poster session presented at the 9<sup>th</sup> Arbeitstagung der Fachgruppe für Differentielle Psychologie, Persönlichkeitspsychologie und Psychologische Diagnostik, University of Vienna, Vienna, Austria.
- Dörr, S., Harzer, C., & Lanzenstiel, J. (2005, May). *Managerial motives and transformational leadership.* Poster session presented at the International Symposium on Personality at Work, Lüneburg, Germany.

#### Invited Talks

- Harzer, C. (2012, May). *Charakterstärken am Arbeitsplatz* [Character strengths at work]. Talk given at a seminar on positive psychology in work and organizational psychology, University of Bern, Bern, Switzerland.

- Harzer, C. (2012, May). *Neue Ergebnisse zur Rolle von Charakterstärken im Beruf* [Recent results about the role of character strengths at work]. Talk given at Diagnostik aktuell 2012, Zurich, Switzerland.
- Harzer, C. (2011, May). *Aktuelle Informationen aus dem Bereich Diagnostik: News zu [www.charakterstaerken.org](http://www.charakterstaerken.org)* [Latest information out of the area of assessment: News about [www.charakterstaerken.org](http://www.charakterstaerken.org)]. Talk given at Diagnostik aktuell 2011, Zurich, Switzerland.
- Harzer, C. (2010, May). *Workshop: Charakterstärken am Arbeitsplatz (Theoretischer Hintergrund und Diskussion der teambezogenen Ergebnisse bezüglich der Charakterstärken)* [Workshop: Character strengths at work (Theoretical background and discussion of results of the team regarding character strengths)]. Talk given at a team-building meeting of a division from armasuisse, Switzerland.
- Harzer, C., & Ruch, W. (2010, March). *Aktualisierung der VIA-IS Berufsprofile* [Updates in the VIA-IS profiles of different vocations]. Talk given at the Meeting of the Committee for Assessment of the Swiss Service Center Professional Training, House of the Cantons, Bern, Switzerland.
- Harzer, C. (2009, September). *Messungen von Orientierungen zum Glück* [Measuring the Orientations to Happiness]. Paper presented at the 4<sup>th</sup> Zürcher Diagnostik-Kongress „Positive Psychologie und Diagnostik“, Zurich, Switzerland.
- Harzer, C. (2008, August). *Persönlichkeitsdiagnostik in der Studien- und Laufbahnberatung: VIA-IS im Berufskontext* [Personality assessment in counseling: The VIA-IS in the work context]. Paper presented at the AGAB-Beratungstag "BerTa 08", University of Zurich, Zurich, Switzerland.

### *Academic Teaching*

Positive Psychology (Bachelor level): fall 2007; spring 2008, 2009, 2010, 2011, 2012

Doing Psychological Experiments (Bachelor level): spring 2008, 2009, 2010, 2011

Test Theory, Test Development, and Test Analysis (Master level): fall 2007, 2009

Research Seminar (Master level): fall 2008, spring 2009

Project group Positive Institutions (Master level): each term from fall 2008 to spring 2012

Multivariate Statistics and Methodology (Master level): sessions in each term from fall 2007 to spring 2009

### *Supervision of Students*

5 Master Theses (empirical)

- 2011/2012: Vom Beruf zur Berufung - Eine Interventionsstudie zur Anwendung der Charakterstärken bei der Arbeit (From job to calling – An intervention targeting the application of character strengths at work)
- 2011/2012: Führt ein Charakterstärkentraining zu erhöhter Arbeits- und Lebenszufriedenheit? - Eine Interventionsstudie zur Anwendung von Charakterstärken am Arbeitsplatz (Does a character strengths intervention lead to a higher job and life satisfaction? – An intervention on the application of character strengths at work)
- 2010/2011: Welchen Beitrag leisten Charakterstärken bei der Vorhersage von beruflicher Leistung? (What role do character strengths play for the prediction of job performance)
- 2009/2010: Was macht einen Beruf zur Berufung? Situationelle Einflüsse in Berufs- und Privatleben auf die Charakterstärken und die Einstellung zur Arbeit (What does make a



job a calling: Situational influences at work and in private life on character strengths and job orientations)

- 2009: Der Einfluss von Charakterstärken, Stress und Coping auf die Arbeits- und Lebenszufriedenheit (The prediction of job and life satisfaction with character strengths, stress, and coping)

Bachelor Theses (each term from spring 2009 to spring 2012)

- in total 15 Bachelor Theses (non-empirical)
- topics:
  - o Möglichkeiten und Grenzen der Veränderbarkeit des Charakters: Annahmen und Empirie (Chances and bounds in the malleableness of the character: Theory and empirical evidence)
  - o Wer gut ist, der tut auch Gutes: Charakterstärken und ihre Korrelate (Being good makes doing good: Character strengths and their correlates)
  - o Wie erfüllend sind Charakterstärken? Ein Überblick zu Studien zum Zusammenhang von Charakterstärken mit Well-Being und Happiness (How fulfilling are character strengths? An overview on research about the relationships between character strengths and well-being and happiness)
  - o Bescheidenheit – Fluch oder Segen? Korrelate der Bescheidenheit (Modesty – Blessing or curse? Correlates of modesty)
  - o Wozu sind positive Emotionen eigentlich gut? Neuere Befunde aus der Positiven Psychologie (What good are positive emotions? – Current results from positive psychology research)
  - o „Bin ich, wer ich bin, oder kann ich mich verändern und weiterentwickeln? Zur Stabilität und Veränderbarkeit von Persönlichkeit“ (Am I as I am or am I able to change and develop? On the stability and malleableness of personality)
  - o Eine Übersicht der prototypischen Messinstrumente der Humorforschung (An overview on prototypical measures in humor research)
  - o „Treffen sich eine Blondine, eine Schotte und ein Argauer ...“ Wer lacht worüber und warum? Theorie und Empirie (“A blonde and a brunette are driving down the highway...” What is funny for whom and why? Theory and empirical evidence)
  - o Humor(stil) und Persönlichkeit (Humor [style] and personality)